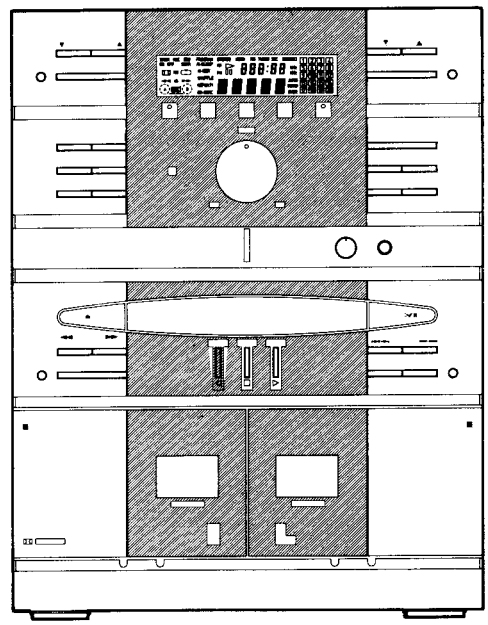
SAMSUNG

SERVICE MANUAL

MAX-370

MINI COMPONENT SYSTEM



SPECIFICATION

GENERAL SECTION

Power Consumption	: 103W
Dimension	: 245(W) X 315(H) X270(D)
Power source	: See the label rating
Frequency Response (20Hz ~ 20KHz)	: ± 3dB
Output Power(D.T;10%,at 1KHz 8 Ω)	: 20W

RADIO SECTION

LW BAND

Frequency Range	: 146KHz~290KHz
Usable Sensitivity	: 1000 μV
Signal to Noise Ratio	: 35dB

AM(MW) BAND

Frequency Range	: 522KHZ~1611KHz
Usable Sensitivity	: 600 μV
Signal to Noise Ratio	: 35dB

FM BAND

Frequency Range	: 87.5MHz~108MHz
Usable Sensitivity	: 6 μV
Signal Noise Ratio	: 65dB
Total Harmonic Distortion	: 0.5%
Separation (STEREO)	: 35dB

TAPE SECTION

RECORD / PLAYBACK

Frequency Range	: 125Hz~12.5KHz
Signal to Noise Ratio	: 45dB
Separation	: 35dB
Total Harmonic Distortion	: 1.5%
Erasing Effect	: 65dB
Wow & Flutter	: 0.2%

COMPACT DISC PLAYER SECTION

Frequency Response	: 20Hz~20KHz(±1 dB)
Signal to Noise Ratio	: 85dB
Total Harmonic Distortion	: 0.08%(1KHz)
Channel Separation	: 60dB(1KHz)
D/A Conversion	: 4 OVER

* Design and specifications are subject to change upon improvement without prior notice.
* Frequency range in radio section can be a little different from the above in accordance with frequency step or region.

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■ SAFETY PRECAUTION

1. CLASS1 LASER PRODUCT

This compact disc player is classified as a CLASS 1 laser product.

2. LASER WARNING LABEL

The label shown below may be affixed or not according to country.

(UL)

This Product Compiles with DHHS Rules 21CFR, Sub chapter J.At date of Manufacture.

(CSA)

CERTIFIED ONLY TO CANADIAN ELECTRICAL CODE.

CERTIFIE EN VERTU DU CODE CANADIAN DE LELETRICITE SEULEMENT

(EU)

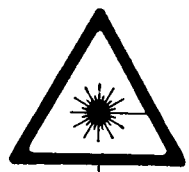
CLASS 1
LASER PRODUCT

Location : Enclosure back.

(SCAN)

ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

(EU)



UL	:	Manufactured for U.S.A. Market.
EU	:	Manufactured for European Market
SCAN	:	Manufactured for Scandinavian Market.

Location : on the disc clamper or inner side of CD door or nearby CD chassis.

3. LASER BEAM WARNING

ADVERSEL — USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING — OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRALEN ÄR FARLIG.

VARITUS — LAITE SISÄLTÄA LASERDIODIN, JOKA LÄHETTÄÄ NÄKYMÄTÖNTA SILMILLE VAARALLISTA LASERSATEILYÄ.

CAUTION — INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

4. LASER DIODE SPECIFICATION (OPTICAL PICK-UP)

- o Material: AlGaAs
- o Wavelength: 760-800mm
- o Emission duration: Continuous
- o Laser Output: 0.2mW
- o * This output is the value measured at distance 1.6mm from the objective lens surface on the optical pick-up block.
- o Classification: CLASS 1

5. WARNING FOR SERVICING

WARNING: When servicing, do not approach the LASER exit with the eye too closely. In case it is necessary to confirm LASER beam emission, be sure to observe from a distance of more than 30cm from the surface of the objective lens on the optical pick-up block.

VARNING: När underhållningsarbeten utförs, närma dig försiktigt och se inte på laserutstrålningen på för näre häll. Ifall det är nödvändigt att betrygga laserstrålens utströmning. Var säker att kontrollera detta från ett avstånd av mer än 30cm (11.81 inch.) från den objektiva linsens yta på den optiska utsåndningspunkten.

ADVARSEL: Når repareringsarbejdet udfoeres, naerm dig forsigtigt og se ikke på laserudstrålingen på for naer hånd. It ilfaeldet at det er noedvaendigt at bestemme laserstrålens udstråling. Vaer sikker på kontrollere dette fra en afstand af mere end 30cm (11.81 inch.) fra den objektive linses overflade på den optiske udsendningspunkt.

VAROITUS: Silmiä on varottava viemästä liian läbeiie Laser-poistokanavaa huoiion aikana. Jos on välttämätöntä varmistaa Laser-Säteen päästö, pysyttels sitä tarkasteltaessa vähintään 30cm etäiyydellä optisen lukon objektiivilinssin pinnasta.

■ SERVICING NOTE

1. Prevent shock hazard by unplugging power supply cord before opening cabinet.
2. Avoid repairing under direct sunshine and heat which may cause cabinet, transistor and IC to be transformed or misoperate.
3. Use a soft cotton swab moistened with warm water or neutral cleaner when parts of unit need to be cleaned.
4. When replacing parts with safety features built in, be sure to use specified parts with same specs only.
5. Avoid repairing the set near TV or any other magnetic forces.
6. Disconnect plug from wall socket during electric storm to reduce the risk of damage.
7. Be careful of electrostatic source when using control IC.
8. Be sure not to separate the pick-up from the unit.

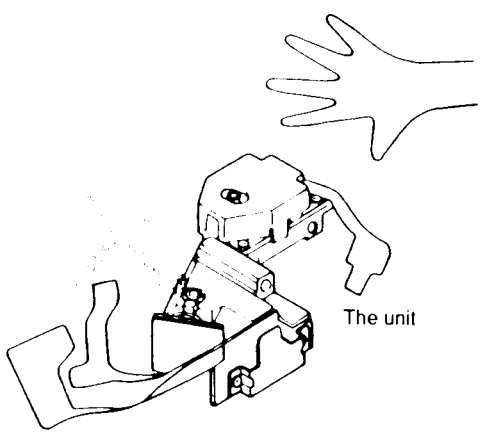
HANDLING THE OPTICAL PICK-UP

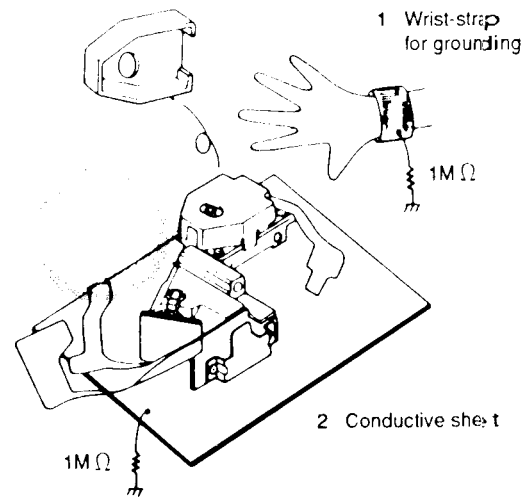
The laser diode in the optical pick up may suffer electrostatic breakdown because of potential static electricity from clothing and your body.

The following method is recommended.

1. Place a conductive sheet on the work bench (The black sheet used as wrapping for repair parts).
2. Place the set on the conductive sheet so that the chassis is grounded to the sheet.
3. Place your hands on the conductive sheet (This gives them the same ground as the sheet).
4. Remove the optical pick up block.
5. Perform work on top of the conductive sheet.
   Be careful not to let your clothes or any other static sources to touch the unit.

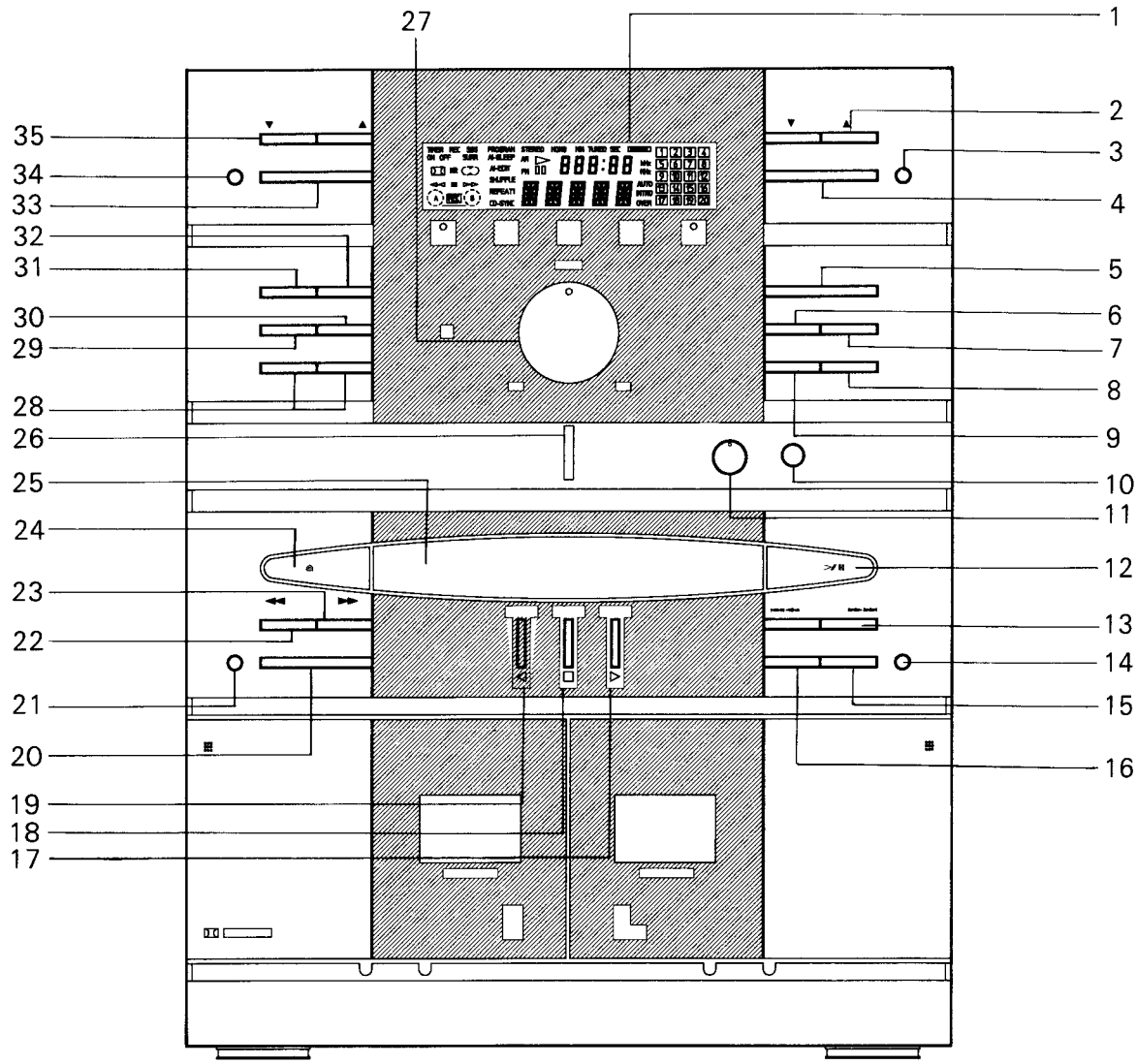
   * Be sure to put on a wrist strap grounded to the sheet.
   * Be sure to lay a conductive sheet made of copper etc. which is grounded to the table.





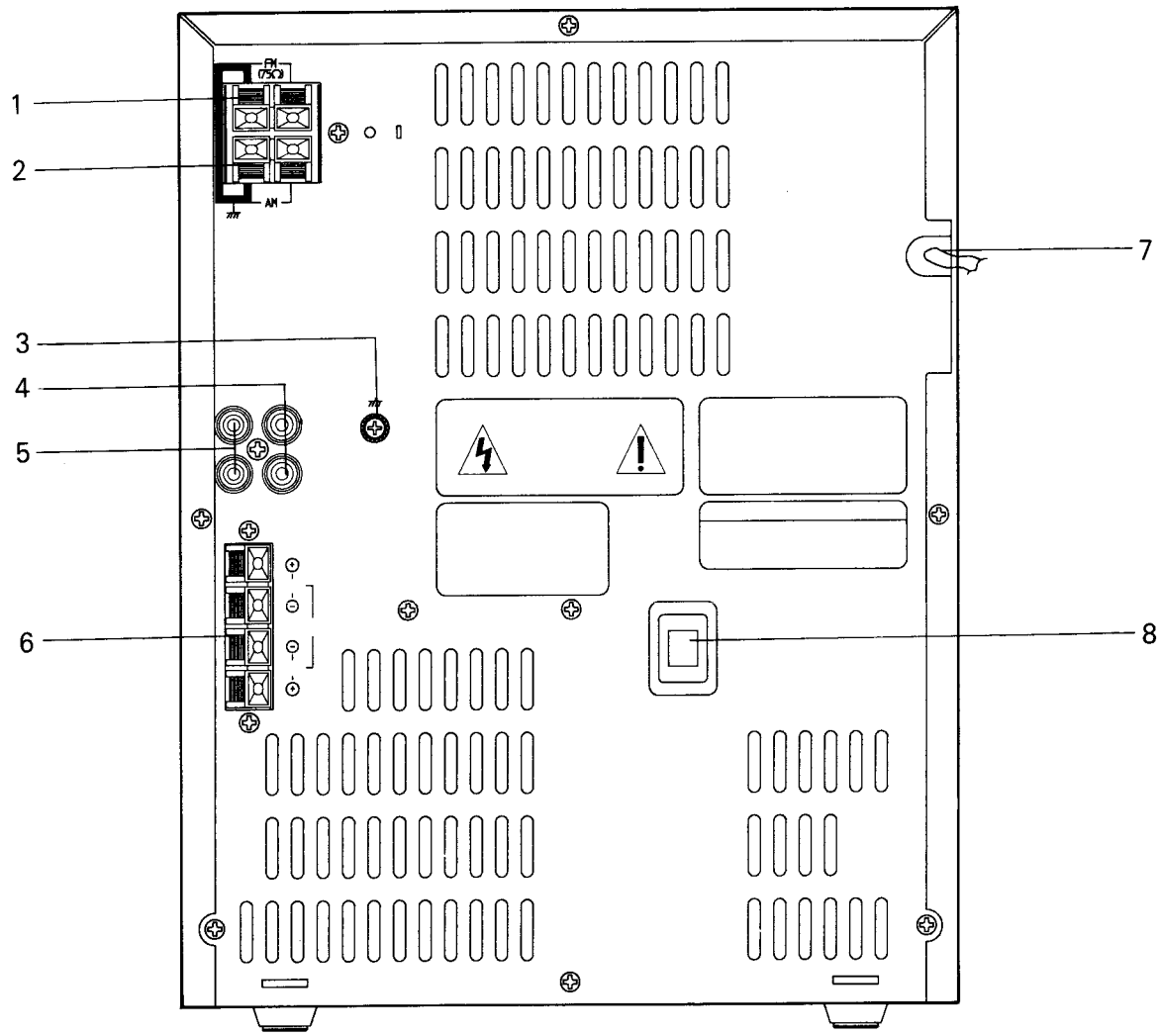
■ LOCATION OF CONTROLS

1. FRONT VIEW



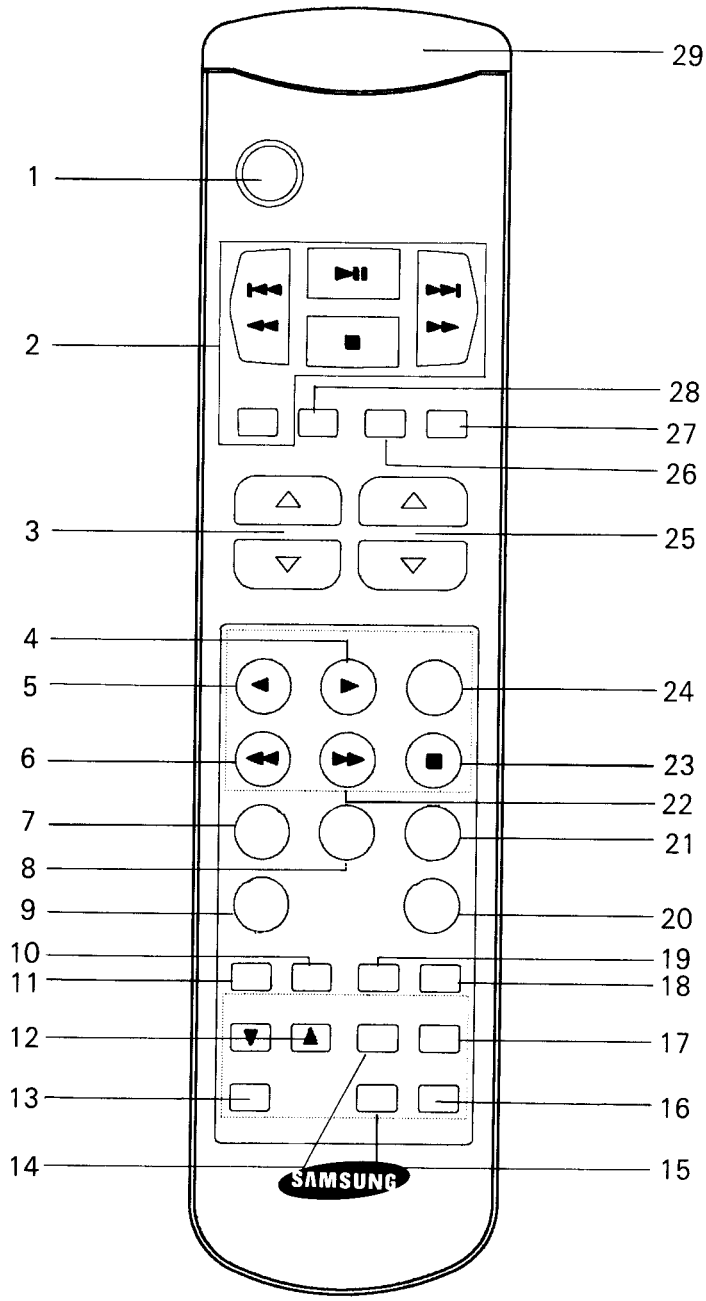
1. DISPLAY
2. PRESET BUTTON
3. CLOCK BUTTON
4. BAND BUTTON
5. FUNCTION BUTTON
6. SBS (SUPER BASS SOUND)
7. EQ PRESET BUTTON
   (PASS, JAZZ, ROCK, CLASSIC, POP)
8. SURROUND BUTTON
9. MUTE BUTTON
10. HEADPHONE JACK
11. BALANCE
12. PLAY/PAUSE BUTTON (CD FUNCTION)
13. SKIP/SEARCH BUTTON (CD FUNCTION)
14. CD SYNCHRO BUTTON (CD FUNCTION)
15. STOP/CLEAR BUTTON (CD FUNCTION)
16. AI-EDIT BUTTON
17. FORWARD PLAY BUTTON
18. STOP BUTTON
19. REVERSE PLAY BUTTON
20. TAPE A/B SELECTOR BUTTON
21. REC PAUSE/MUTE BUTTON
22. REWIND BUTTON
23. FAST FORWARD BUTTON
24. OPEN/CLOSE BUTTON
25. CD DOOR
26. POWER BUTTON
27. VOLUME
28. DUBBING BUTTON
    HIGH SPEED DUBBING BUTTON
    NORMAL SPEED DUBBING BUTTON
29. COUNTER DISPLAY BUTTON
30. COUNTER RESET BUTTON
31. REVERSE MODE BUTTON
32. DOLBY NR ON/OFF BUTTON
33. FM MODE (STEREO/MONO) BUTTON
34. MEMORY BUTTON
35. TUNING UP/DOWN BUTTON

2. REAR VIEW



1. FM ANTENNA TERMINAL
2. AM ANTENNA TERMINAL
3. EARTH TERMINAL
4. PHONO INPUT JACK
5. AUX INPUT JACK
6. SPEAKER TERMINAL
7. POWER CORD
8. VOLTAGE SELECTOR (OPTION)

3. REMOCON



1. POWER BUTTON
2. CD SECTION
   PLAY/PAUSE BUTTON
   STOP BUTTON
   SKIP/SEARCH BUTTON
   +10 BUTTON
3. PRESET BUTTON
4. FORWARD PLAY BUTTON
5. REVERSE PLAY BUTTON
6. REWIND BUTTON
7. FUNCTION SELECTOR BUTTON
8. EQ PRESET BUTTON
9. PROGRAM BUTTON
10. SHUFFLE PLAY BUTTON
11. CD SYNCHRO BUTTON
12. TUNING UP/DOWN BUTTON
13. MODE (STEREO/MONO) BUTTON
14. TIMER ON/OFF BUTTON
15. TIMER CHECK BUTTON
16. CLOCK SET BUTTON
17. TIMER SET BUTTON
18. REPEAT BUTTON
19. INTRO SCAN BUTTON
20. DISPLAY BUTTON
21. AI-SLEEP BUTTON
22. FAST FORWARD BUTTON
23. STOP BUTTON
24. A/B DECK SELECTOR BUTTON
25. VOLUME UP/DOWN BUTTON
26. SLEEP BUTTON
27. MUTE BUTTON
28. BAND BUTTON
29. INFRARED BEAM TRANSMIT WINDOW

■ DISASSEMBLY INSTRUCTION

* Be sure to remove power cord befor disassembling the player

1. TOP CABINET & PCB VOLUME - FIG.1 -

1) Release 10 screw (a).
2) Remove TOP CABINET (direction A).
3) Pull off the Volume knob and then remove nut .
4) Remove PCB VOLUME (direction B).

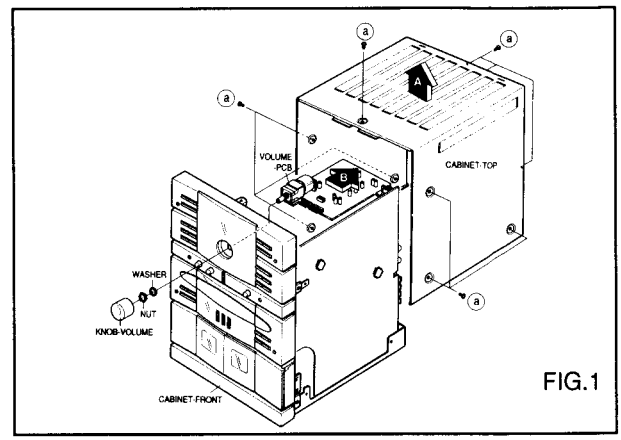


FIG.1

2. REAR CHASSIS & CD MECHA & MAIN-PCB - FIG. 2 -

1) Release 9 screw (a).
2) Remove REAR CHASSIS (direction A).
3) Release 4 screw (b).
4) Remove CD MECHA (direction B).
5) Release 1 screw(C).
6) Remove MAIN-PCB(direction C).

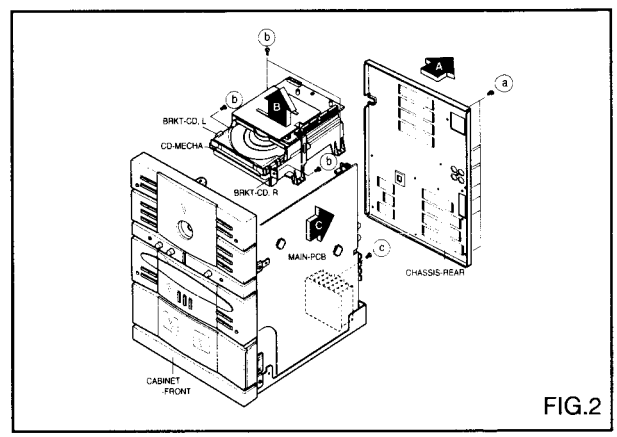


FIG.2

3. FRONT CABINET & BOTTOM CHASSIS - FIG. 3 -

1) Release 2 screw (a).
2) Release 2 screw (b).
3) Remove BOTTOM CHASSIS (direction A).

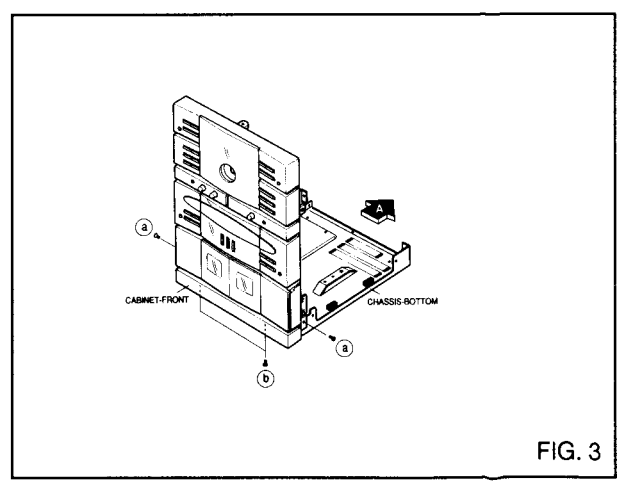


FIG. 3

■ BASIC CIRCUIT OPERATION

1.MAIN & TUNER

LC86624A - 5495 (MICOM IC) : UIC2

PIN No.	PIN Name	I/O	FUNCTION	ACTIVATING
1	SBS	O	Select SBS : LOW	L
2	—			
3	VOLUME LED	O	POWER ON : Low	L
4	VOLUME UP	O	Motor Volume up High : Low	H,L
5	VOLUME DOWN	O	Motor Volume down High : Low	H,L
6~10	EQ1~EQ5	O	select EQ High : Low	L
11	—			
12	RESET	I	Reset	L
13	XT1			
14	XT2			
15	Vss		DIGITAL GND	
16	CF1		Input OSC signal (12MHz)	
17	CF2		Output OSC signal (12MHz)	
18	VDD1		U - Com B^+ (5V)	
19~26	K1~K18	I	Panel key input	
27	SCOR	I	Subcode Output S0, S1	H
28	POSNS	I	Power ON/OFF Senser	L
29	—			
30	REMOCON	I	Remocon signal input	H,L
31~46	G1~G16	O	VFD GRID Control	
47	VDD VPP		VFD B^+	
48	VP		VFD GRID (-36V)	-36V
49~64	S1~S16	O	VFD SEGMENT CONTROL	-30V
65	OPEN	O	CD DOOR OPEN COMMEND Output	H
66	CLOSE	O	CD DOOR CLOSE COMMEND Output	H
67	XRST/LDON	O	CD SSP DSP RESET/LASER DIODE ON	H
68	XLT	O	CD COMMEND Output	L
69	EMPHASIS	O	CD EMPHASIS CONTROL	H
70	CLK	O	CLOCK CD DATA	
71	DATA	O	CD COMMEND Output	
72	CD-MUTE	O	CD MUTE CONTROL	H
73	—			
74	SUBQ	I	Output subcode Q	H
75	SQCK	O	Clock for reading subcode Q	
76	GFS	I	Input signal Frame	H
77	DSI	I	Input display Deck	H,L
78	DSCK	I	Clock display Deck	H,L
79	OPEN S/W	I	CD DOOR OPEN S/W	L
80	CLOSE S/W	I	CD DOOR CLOSE S/W	L
81	$\overline{\text{OPTION}}$	I	OPTION check input port	
82	$\overline{\text{STEREO}}$	O	FM STEREO	L
83	$\overline{\text{SD (SIG)}}$	I	AM/FM TUNING	L
84	$\overline{\text{STRQ}}$	O	Input signal IF Request (AM/FM)	H
85	$\overline{\text{STOUT}}$	I	Input signal IF (AM/FM)	L
86	MONO/ST	O	Mono : H, STEREO : L	H,L
87	FOK	I	CD FOCUS OK SIGNAL	H
88	SENSE	I	Input CD SENSE, FZC , TZC	H
89	VSS		GND	
90	VDD2		MICOM B^+ (5V)	
91	SURROUND	O	Select : L SURROUND	L
92	DRQ	O	DISPLAY DECK port	H
93	SYS-CLK	O	CLOCK system	H,L
94	SYS-LE	I/O	CHIP ENABLE system	H
95	SYS-DATA	I/O	DATA system	H,L
96	F-CE	O	FUNCTION / DTS (PLL IC) CHIP ENABLE	H
97	F-CLK	O	FUNCTION / DTS (PLL IC) CLOCK	H,L
98	F-DATA	O	FUNCTION / DTS (PLL IC) DATA	H,L
99	POCNT	O	SYSTEM power control (power on : H)	H
100	AUDIO MUTE	O	SYSTEM Audio Mute control (Mute : H)	H

2. CASSETTE DECK SECTION

● KC56C-1660 (MICOM IC) : UIC1

* I : Input, O : Output

PIN No.	PIN NAME	I/O	FUNCTION	ACTIVATING	
				H	L
1	Motor	-	Motor operation signal output port (option)	TWO MOTOR	ONE MOTOR
2	REV	-	DECK operation signal output port (option)	ONE DECK	TWO DECK
3	Dolby B/C	-	Dobly NR B/C	C	B
4	Music center/component	-	Music center/Component option port	Component	Music Center
5~8	Key Matrix	I	SW input port		
9~10	—	-	Unconnected		
11~14	R,REC,Cro2,Mode,Half	I	B DECK operation input port		B Deck
15~17	SI,SO,$\overline{SCK}$	-	DECK FLT operation output port		
18	D, RQ	-			
19~20	F REC,Half B	I	B DECK operation input port		B Deck
21~24	Hall,Cro2,Mode,Half	I	A DECK operation input port		A Deck
25	AMPS IN	I	AMPS blank signal input	High	
26~28	CLK,CE,DATA	I/O	System control operation port		
29~31	—		Unconnected		
32	VDD	-	VDD, +5V		
33~34	SOL1,SOL2	O	DECK FF/REW Solenoid operation port	High	
35	MO1	O	Motor operation output port	High	
36	MO2	O	Unconnected		
37	$\overline{REC}$	O	REC, Dubbing : LOW		REC Dubbing
38	PB/REC	O	DUB,PB : High, REC : LOW	PB, DUB	REC
39	—	-	NC		
40	A/PB	O	A DECK : High, B DECK : LOW	A DECK DUB	B Deck
41	—	-	NC		
42	REC, Mute	O	REC : LOW, PB : High	PB	REC
43	Line, Mute	O	STOP : High, PLAY : LOW	STOP	PLAY
44	P/B	O	A,B DECK PLAY : High	—	—
45	RESET	-	RESET		
46~47	X1,X2	-	4MHz osc port		
48	HI-Dub	O	HI-Dubbing : High	HI-DUB	
49	$\overline{DOLBY\text{-}ON}$	O	Dolby NR ON : LOW	HI-DUB	DOLBY ON
50~51	—	-	NC	—	
52~55	—	-	Option	—	
56~59	—	-	NC	—	
60~63			Option		
64	Vss	-	GND	—	

3. CD PLAYER

1) KS5990/KS5990B (Digital Signal Processor) : NIC5990

* I/O : INPUT/OUTPUT

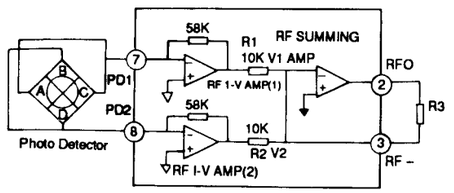
Pin No.	Symbol	I/O	Description
1	SMEF	O	Pin 1 output is switched constant when output filter of the spindle motor is energized.
2	SMON	O	ON/OFF control for spindle motor.
3	SMPD	O	Spindle motor drive. Provides rough control during CLV-S mode and phase control during CLV-P mode.
4	SMSD	O	Spindle motor drive. Controls speed during CLV-P mode.
5	EFMZ	I	EFM signal from RF amplifier.
6	EFMO	O	Controls slice level of the EFM signal.
7	LOCK	O	The output of pin 7 reflects the status of the GFS signal which is sampled at PBFR/16. When the GFS signals is "H", but, when the signal has remained "L" for at least 8 samples, the output of pin 7 is "L".
8	VCOO	O	VCO output. The frequency is f = 8.6436MHz, when locked by the DBFR signal.
9	VCOI	I	VCO input.
10	TEST	I	(0V).
11	PHAS	O	The output of Pin11 provides phase comparison of EFM signal and VCO/2.
12	Vss	—	GND (0V).
13	MCK	I	Pin 13 provides serial transmission clock from the CPU. Data is latched on the leading edge of the clock.
14	MLT	I	Pin 14 provides latch input from the CPU. 8-bit shift register data (serial data received from the CPU) is latched in each of the registers.
15	MDAT	I	Serial data from the CPU.
16	XRST	I	System reset ("L").
17	TRCK	I	Tracking pulse input.
18	ISTAT	O	Output reflecting intenal condition as designated by address.
19	MUTE	I	Muting input. MUTE is "L" when ATTM of internal register A is "L" (normal condition). MUTE is "H" when condition is set.
20	SQOK	O	Output the results CRC check of subcode Q.
21	SBCK	I	Clock input for subcode serial output.
22	SDAT	O	Serial output of subcode.
23	SQDT	O	Output of subcode Q.
24	S0S1	O	Output of subcode sync S0 + S1.
25	SQCK	I/O	Clock for reading subcode Q.
26	SQEN	I	Input for selecting SQCK (L; SQCK is output, H; SQCK is input)
27	SRAM	I	SRAM is "H" in Normal, SRAM is "L" when system is testing.
28	LKFS	O	Display output for frame sync lock status.
29	DB8	I/O	Data pin for external RAM. DATA8 (MSB) in test mode. Hi-Z in normal
30	DB7	I/O	Data pin for external RAM. DATA7 in test mode. Hi-Z in normal
31	DB6	I/O	Data pin for external RAM. DATA6 in test mode. Hi-Z in normal
32	DB5	I/O	Data pin for external RAM. DATA5 in test mode. Hi-Z in normal
33	V_{DD}	—	Power supply (+ 5V).
34	DB4	I/O	Data pin for external RAM. DATA4 in test mode. Hi-Z in normal
35	DB3	I/O	Data pin for external RAM. DATA3 in test mode. Hi-Z in normal
36	DB2	I/O	Data pin for external RAM. DATA2 in test mode. Hi-Z in normal
37	DB1	I/O	Data pin for external RAM. DATA1 (LSB) in test mode. Hi-Z in normal
38	AD01	O	(LSB) In normal mode (TEST = 'L', SRAM = 'H'), these pins are High impedance (Hi-Z) In test mode (TEST = 'H', SRAM = 'L'), these pins are Output address of external RAM
39	AD02	O	
40	AD03	O	
41	AD04	O	
42	AD05	O	
43	AD06	O	
44	AD07	O	

Pin No.	Symbol	I/O	Description
45	AD08	O	
46	AD09	O	
47	AD10	O	
48	AD11	O	(MSB)
49	WE	I/O	In normal mode, this is WE output. In test mode, write enable input.
50	CE	I/O	In normal mode, this is CE output. In test mode, chip enable input.
51	4MCK	O	Divider output for crystal. f = 4.2336MHz
52	Vss	—	GND (0V)
53	XIN	I	Input to crystal oscillator circuit. Depending on the mode the frequency is either f = 8.4672 or 16.9344MHz.
54	XOUT	O	Output from crystal oscillator circuit. Depending on the mode the frequency is either f = 8.4672 or 16.9344MHz.
55	SEL1	I	Mode selection input 1.
56	SEL2	I	Mode selection input 2.
57	SEL3	I	Mode selection input 3.
58	SEL4	I	Mode selection input 4. Code switch input for audio data output. 2's complement output when "L", offset binary output when "H".
59	SEL5	I	Mode selection input 5. Code switch input for audio data output. Serial output when "L", parallel output when "H".
60	APTR	O	Output for aperture compensation. "H" when R-ch.
61	APTL	O	Output for aperture compensation. "H" when L-ch.
62	C1F1	O	Monitor output reporting status of error correction for C1 decoder. When SEL5 = 'L', DA01 (LSB of parallel audio data) is output when SEL5 = 'H'.
63	C1F2	O	Monitor output reporting status of error correction for C1 decoder when SEL5 = 'L', DA02 is output when SEL5 = 'H'.
64	C2F1	O	Monitor output reporting status of error correction for C2 decoder when SEL5 = 'L', DA03 is output when SEL5 = 'H'.
65	C2F2	O	Monitor output reporting status of error correction for C2 decoder when SEL5 = 'L', DA04 is output when SEL5 = 'H'.
66	C2FL	O	When SEL5 = 'L', output of status condition. C2FL is set 'H' when the C2 sequence. Presently being corrected becomes impossible to correct. DA05 is output when SEL5 = 'H'.
67	C2PO	O	Display output of the C2 pointer when SEL5 = 'L', DA06 is output when SEL5 = 'H'.
68	XTFR	O	When SEL5 = 'L', output of read frame clock which is 7.35KHz of the crystal system. DA07 is output when SEL5 = 'H'.
69	PBFR	O	When SEL5 = 'L', output of write frame clock which is 7.35KHz when locked by the crystal system. DA08 is output when SEL5 = 'H'.
70	$\overline{PBCK}$	O	When SEL5 = 'L', output of VCO/2 (f = 4.3218MHz when locked by the EFM signal). DA09 is output when SEL5 = 'H'.
71	FSDW	O	When SEL5 = 'L', output for unprotected frame sync patterns. DA10 is output when SEL5 = 'H'.
72	ULKFS	O	Output for display of status of frame sync protection when SEL5 = 'L', DA11 is output when SEL5 = 'H'.
73	V_{DD}	—	Power supply (+ 5V).
74	$\overline{JIT}$	O	When SEL5 = 'L', output for display of either RAM overflow or underflow for +4 frame jitter absorption. DA12 is output when SEL5 = 'H'.
75	ZWDCK	O	When SEL5= 'L', output for strobe signal (352.8KHz when DF is ON, 176.4KHz when DF is OFF). DA13 is output when SEL5 = 'H'.
76	$\overline{BLCK}$	O	When SEL5 = 'L', inverse output of BLCK. DA14 is output when SEL5 = 'H'.
77	BLCK	O	When SEL5 = 'L', bit clock output (4.2336MHz when DF is ON, 2.1168MHz when DF is OFF) DA15 is output when SEL5 = 'H'.
78	DATA	O	Serial data output of audio signal when SEL5 = 'L'. DA16 is output when SEL5 = 'H'.
79	WDCK	O	Strobe signal output. Output is 176.4KHz when DF is on. Output is 88.2KHz when DF is off.
80	CHCK	O	Strobe signal output. Output is 88.2KHz when DF is on. Output is 44.1KHz when DF is off.

2) KA8309 (Servo Signal Processor) :NIC8309

Pin No.	Symbol	Descriptions
1	CV	Center voltage
2	HFGD	Reduce high frequency gain with capacitor connected between pin 2 and pin 3.
3	FS	High frequency gain of focus servo can be changed by switching FS3 on or off.
4	LFR	Rising low frequency bandwidth of focus loop.
5	FSEO	focus servo error output.
6	FSEI	inverting input pin for focus amplifier.
7	FSCH	Time constant external pin to generate focus search waveform.
8	RTG	Time constant external pin to switch the tracking gain of high frequency.
9	TG	Provide time constant to change the high frequency tracking gain.
10	AVcc	Analog positive power supply.
11	TKEO	Tracking error output.
12	TKEI	Inverting input pin for tracking amplifier.
13	SLEN	Non-inverting input pin for tracking amplifier.
14	SLEO	Sled output.
15	SLEI	Inverting input pin for sled amplifier.
16	STOP	Pin for detecting a signal for the on/off limit switch of the innermost pait of the disc.
17	FSET	Setting the peak frequency of the focus, tracking phase compensation and to for the CLV LPF.
18	SENS	Output pin for FZC, AS,TZC,STOP and BUSY by command from CPU.
19	AVee	Analog negative power supply.
20	CNO	Track number count output.
21	DRCT	Control pin for one track jump.
22	REST	Reset input pin, reset at "L".
23	SDATA	Serial data input.
24	SLOAD	Latch input.
25	SCLK	Serial data tranfer clock.
26	DGND	Digital ground.
27	BPF	Provide time constant for the loop filter.
28	DPI	Input pin for detected phase.
29	ISET	Current is input, determining the peaks of focus search, track jump, and sled kick.
30	FVC	External resistor to adjust free running frequency of VCO.
31	3.5V	Regulated output voltage.
32	864M	Output pin of 8.64MHz VCO.
33	LOCK	Pin for the operation of the sled runaway prevention circuit active "L".
34	MDP	Pin for connecting the DSP.
35	MON	Pin for connecting the DSP.
36	FSW	Providing an external LPF time constant for the CLV servo.
37	DVcc	Digital positive power supply.
38	SPDL1	Inverting input for spindle servo amplifier.
39	SPDL0	Spindle servo error output.
40	WDCK	Clock input for auto-sequence.
41	FOK	Focus ok signal input pin.
42	MRR	Mirror signal input pin.
43	DVee	Digital negative power supply.
44	DFT	Defect signal input pin.
45	TKE	Tracking error signal input pin.
46	TZC	Input pin for the zero cross tracking comparator.
47	ATS	Input pin for detect ATSC.
48	FCE	Input pin for focus error signal.

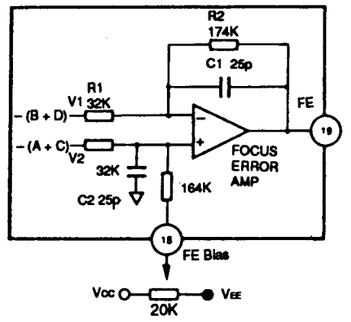
2) RF AMPLIFIER(KA9201) : NIC9201



RF I-V AMP(1) and RF I-V AMP(2) are converted into voltage from current signal of PD1 (A + C) and PD2 (B + D) through the 58Kohm internal resistor.
Furthermore, it is added in RF summing amplifier, this signal (A + B + C + D) is output at RFO (pin 2) The RF output voltage (low frequency) is as follow.

VRF=R3*(iPD1+iPD2)
=R3*(V1/R1+V2/R2)
=27K*(V1/10K+V2/10K)
=2.7K*(V1+V2)

(3) FOCUS ERROR AMPLIFIER (KA9201) : NIC9201



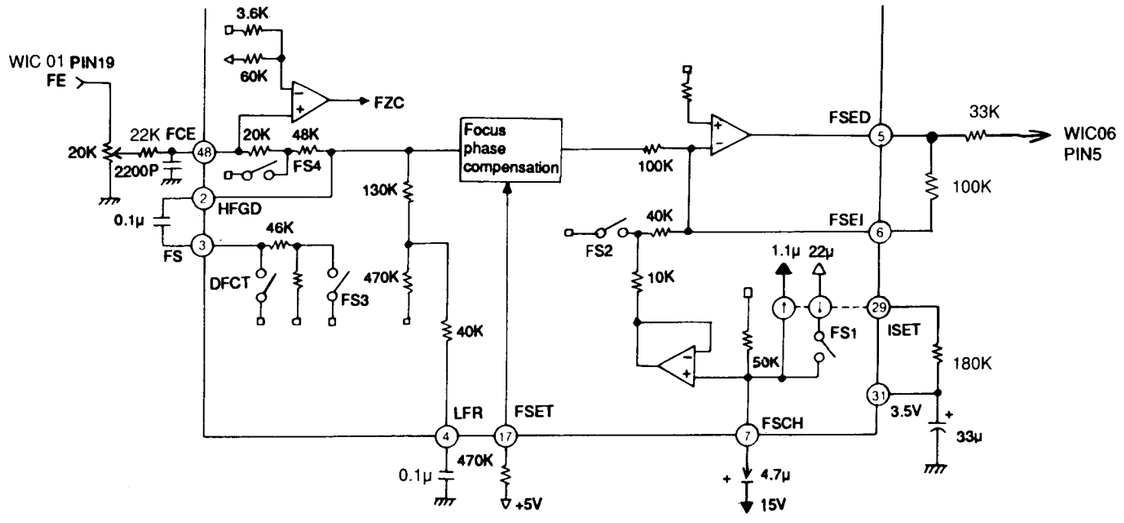
The Focus Error AMP is the difference between RF I-V AMP (1) output (A + C) and RF I-V AMP(2) output (B + D). This two [– (A + C), –(B + D)] signals are each applied to the (–) and (+) input of Focus Error AMP.
As thela result of differential voltage, Focus Error signal is appeared at FE pin (pin 19).
This FE output voltage (low frequency) become [(A + C) – (B + D)], as follow.

V_{FE} = R2/R1 x (V2–V1)
= 5.4 (V2 – V1)

The focus error voltage is directed to the focus servo circuit, to maintain optimum focusing at all times.

(4) FOCUS SERVO (KA830 9) :NIC8309

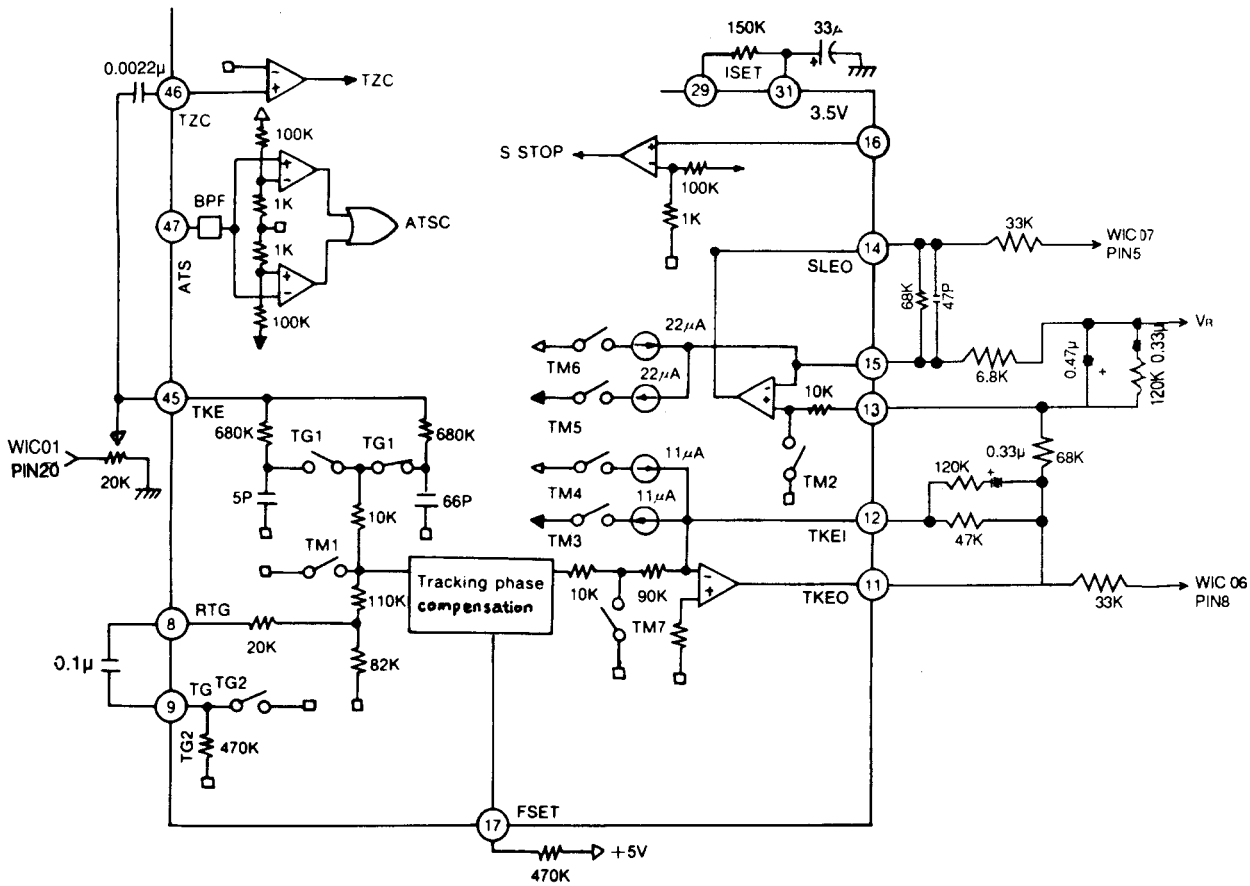
The below is a block diagram of the focus servo system.
When FS3 is switched on, the high frequency gain can be reduced by forming a low frequency time constant through a capacitor connected across pins 2 and 3 and the internal resistor.
The capacitor across the pin 4 and GND has a time constant to raise the low frequency usually playback condition.
The peak frequency of the focus phase compensation is inversely proportional to the resistor connected to pin 17 (about 1. 2KHz when the resistor is 470 k Ω).



The focus search peak becomes about ± 1.1 Vp-p with above constant. The peak is inversely proportional to the resistor connected across the pins 29 and 31. However, when this resistor is varied, the peaks of track jump and sled kick also vary.
The FZC comparator invert input is set to 5.7% of the difference between the reference voltage Vcc and Vc (Pin 1) : 5.7% x (Vcc – Vc).

(5) TRACKING SLED SERVO SYSTEM (KA8309B) : NIC8309

The below is a block diagram of the tracking sled servo system.
The capacitor across pins 8 and 9 has a time constant to lower the high frequency when TG2 is switched off. The tracking phase compensation peak frequency is inversely proportional to the resistor connected to pin 17 (about 1.2KHz when the resistor is 470KΩ).
For a tracking jump in the FWD or REV direction, TM3 or TM4 are set to ON. At this time, the peak voltage fed to the tracking coil is determined by the TM3 and TM4 current values and the feedback resistor from pin 12. That is:
Track jump peak voltage = TM3 (TM4) current value x feedback resistor value

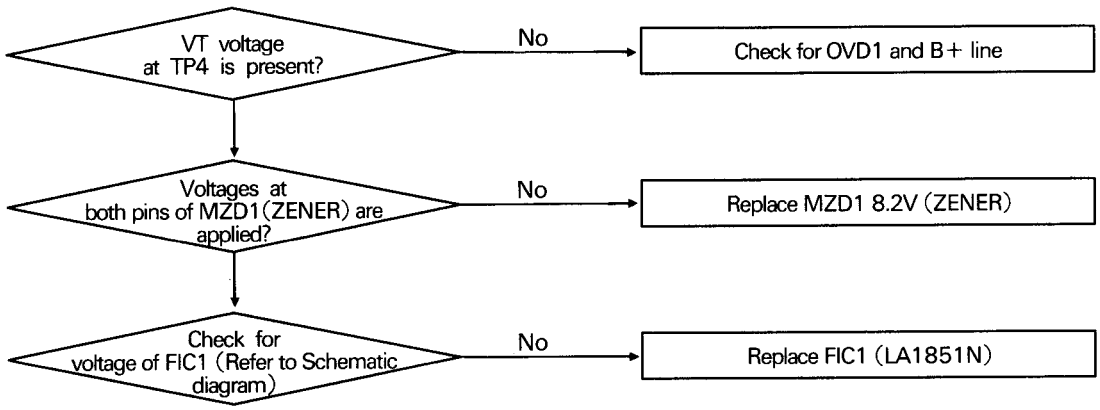


The FWD or REV sled kick is done by setting TM5 or TM6 ON. At this time, the peak voltage added to the sled motor is determined by the TM5 or TM6 current value and the feedback resistor from pin 15.
Sled jump peak voltage = TM5 (TM6) current value x feedback resistor value
Each SW current value is determined by the resistor connected to pins 29 and 31.
When the resistor is at about 150KΩ ,
TM3 or TM4 is + 11 μA and TM5 or TM6 is + 22 μA.
This current value is almost inversely proportional to the resistor, variable within a range of about 5 to 40 μA for TM3
STOP is the ON/OFF detection signal for the limit SW or the sled motor's innermost circumference.

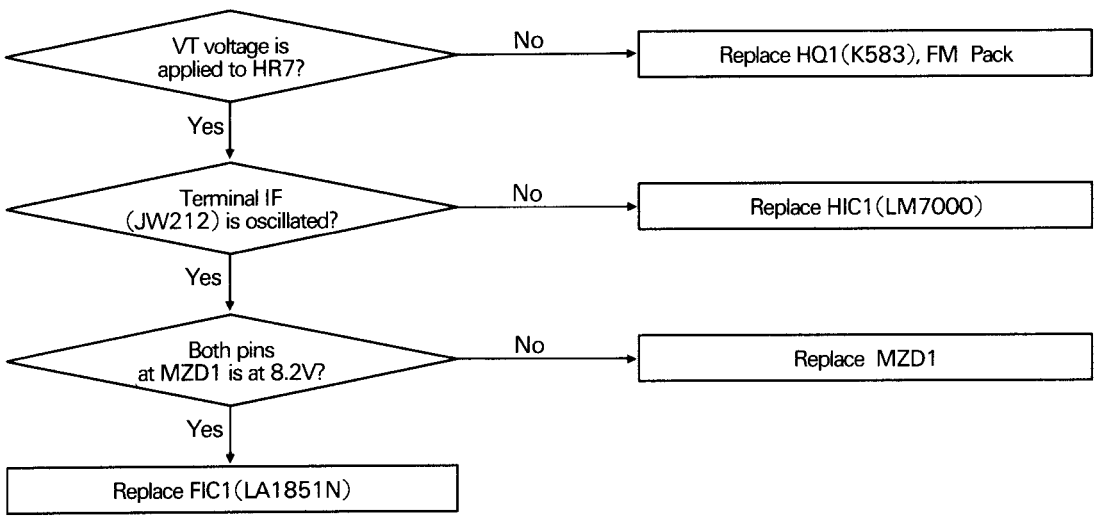
■ TROUBLESHOOTING GUIDE

1. TUNER & EQUALIZER

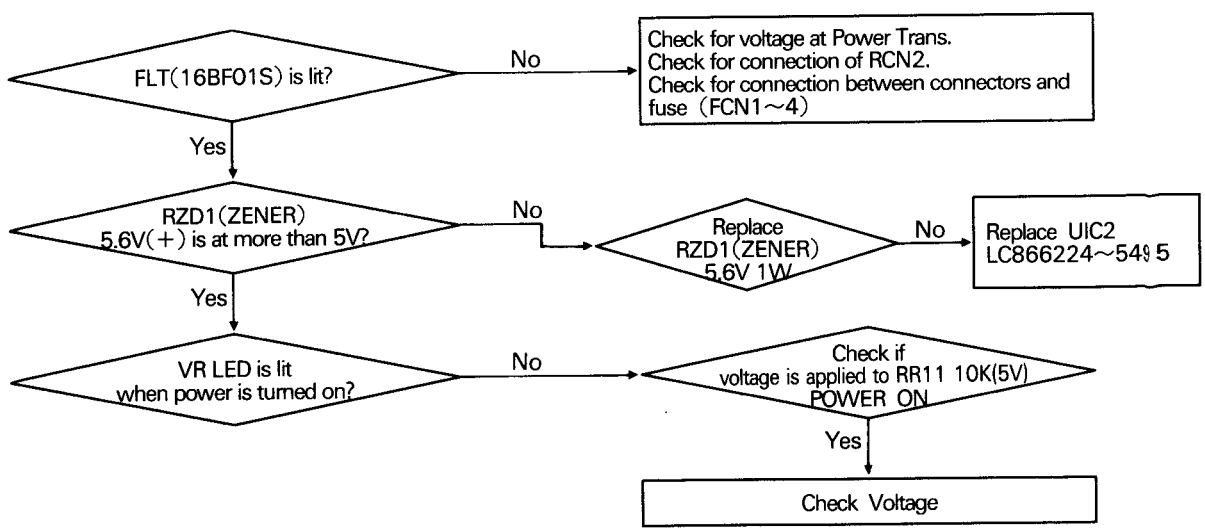
1) NO AM sound


VT voltage at TP4 is present?
No
Check for OVD1 and B+ line
Voltages at both pins of MZD1(ZENER) are applied?
No
Replace MZD1 8.2V (ZENER)
Check for voltage of FIC1 (Refer to Schematic diagram)
No
Replace FIC1 (LA1851N)

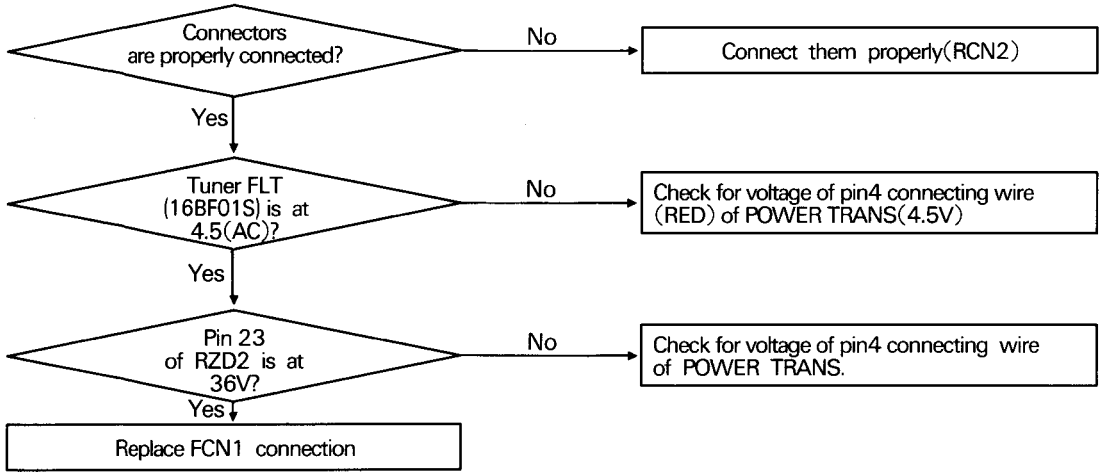
2) NO FM sound



3) NO POWER



4) FLT INOPERATIVE



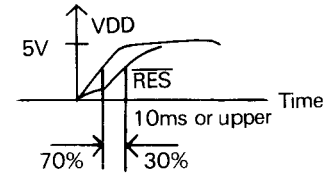
2. CASSETTE DECK SECTION

1) TROUBLE SHOOTING CHART

<table>
<tr><th>Circuit block</th><th>Main Function</th><th>Check point when malfunctioning</th></tr>
<tr><td>TAPE IC JIC1
(KA22292)</td><td>● DECK SINGNAL OUT PUT</td><td>● Check for voltage at PIN 27, 28
PIN 27 A, P/B(H) B,P/B(L)
PIN 28 P/B(L), R/P(H)</td></tr>
<tr><td>AMPS
JIC2(LA2010)</td><td>● AMPS & REPEAT</td><td>● Check for voltage at PIN 6
When between songs : Low(Normal)
When playing songs : High(Normal)

● Check for signal presence at pin 1</td></tr>
<tr><td rowspan="2">DOLBY NR AMP
DIC1(KA2271)</td><td>● Convert P/B & SOURCE SIGNAL</td><td>● Check for voltage at PIN 4
On PLAY mode : High
On RECORD mode : Low
On DUBBING mode : High

● Check for voltage at PIN 38 of UIC1
<table><tr><th>Mode</th><th>Voltage(Pin 38)</th></tr><tr><td>PLAY</td><td>High</td></tr><tr><td>RECORD</td><td>Low</td></tr><tr><td>DUBBING</td><td>High</td></tr></table></td></tr>
<tr><td>● Convert DOLBY NR ON/OFF</td><td>● DIC1 13 CHECK
<table><tr><th>NR</th><th>Pin 13</th></tr><tr><td>OFF</td><td>High</td></tr><tr><td>ON</td><td>Low</td></tr></table></td></tr>
<tr><td>BIAS OSC</td><td>● Oscillate RECORD BIAS
(105KHz)</td><td>● Check for oscillation frequency of TP3
● Check for LQ1, LQ3 status
<table><tr><th>Mode</th><th>LQ1</th><th>LQ3</th></tr><tr><td>RECORD</td><td>Turned ON</td><td>Turned OFF</td></tr><tr><td>DUBBING</td><td>Turned ON</td><td>Turned OFF</td></tr></table>(Normal)</td></tr>
</table>

Circuit block	Main Function	Check point when malfunctioning
R/P SWITCHING	● Convert PLAY/RECORD Head (Deck B)	● Check for voltage at gate of LQ4L, LQ4R Mode / LQ4L, LQ4R REC / −2V PLAY / 1.4V
μ-COM UIC1 (KS56C 1660)	● Control Deck Mechanism ● Control FLT DISPLAY ● Control MUTE circuit ● Control each circuit	● Check of RESET when power is turned ON 
FL DISPLAY UIC1(KS56C 1660)	● Drive FL DISPLAY	● Check for Shieldwire linking PIN 16. 17.

2) CASSETTE DECK SECTION

(1) TROUBLE SHOOTING CHART

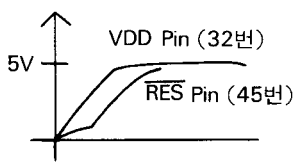
CHECK POWER

- Check power jack.
- Check voltage RQ7, RIC2
  RQ7 Input : 21V, RIC2 Input : 21V
  Output : 21V, Output : 12V

(NORMAL)

↓

μ-COM RESET CHECK (UIC1)



(NORMAL)

↓

CHECK MOTOR OPERATION & SOLENOID

FUNCTION	CQ3	CQ5	CQ4
P/B DECK OPERATION	Trun-on		
R/P DECK OPERATION	Trun-on		

(NORMAL)

↓

CHECK DECK CONNECTOR WIRE

- P/B DECK 11 PIN WIRE &
  R/P DECK 13 PIN WIRE CHECK

(NORMAL)

(2) HIGH-SPEED DUBBING PROBELM

μ-COM & TR CHECK

Step	Pin \ Funtion	Hi/DUb	NOR/DUb
1	μ-COM 48	H	L
2	CQ2	Turn on	Turn off
3	CQ1	Turn off	Turn on

(NORMAL)

(3) RECORDING PROBLEM

CHECK μ-COM & TR

Step	Pin \ Function	REC
1	μ-COM 37	L
2	LQ3	Turn-off
3	JQ5	Turn-on
4	LQ4L/4R	−2V
5	DIC1, 4	L

(NORMAL)

(4) DUBBING PROBLEM

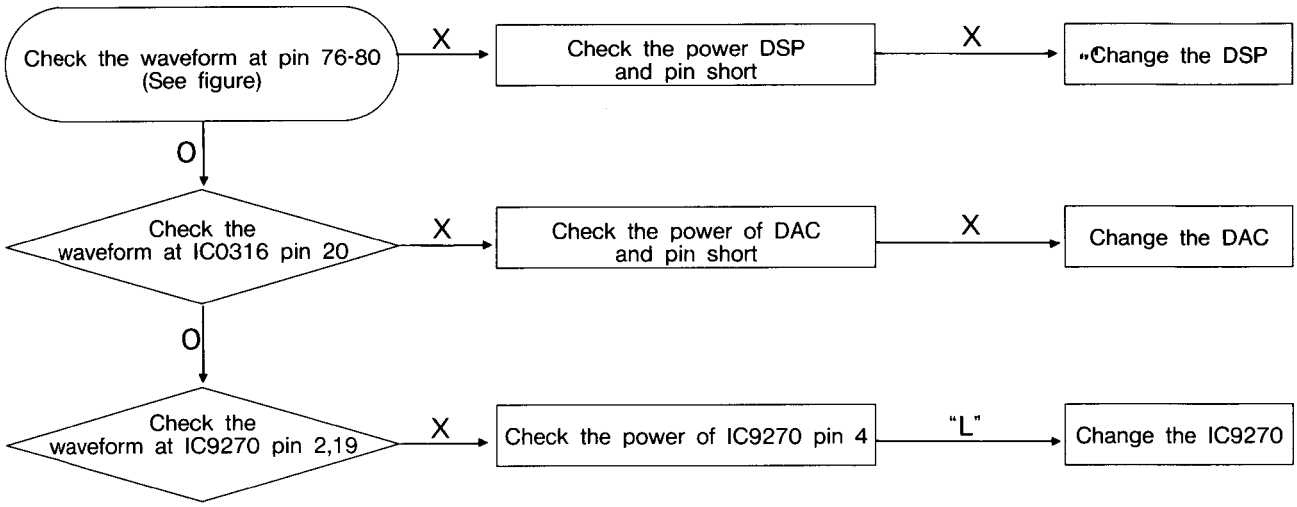
CHECK μ-COM & TR

Step	Pin \ Function	DUBBING
1	DIC1, 4	H
2	JQ5	Turn-on

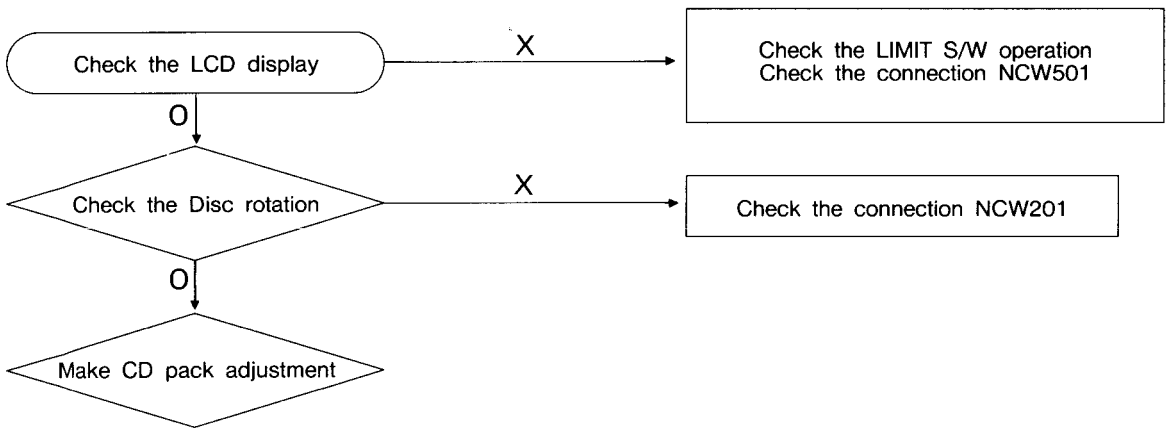
(NORMAL)

2. CD PLAYER

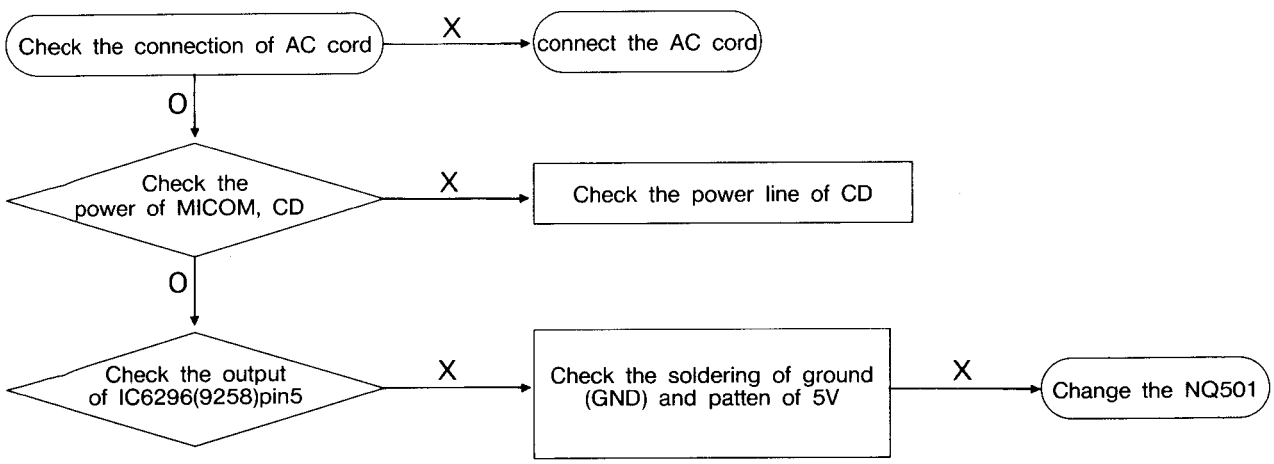
1) NO AUDIO



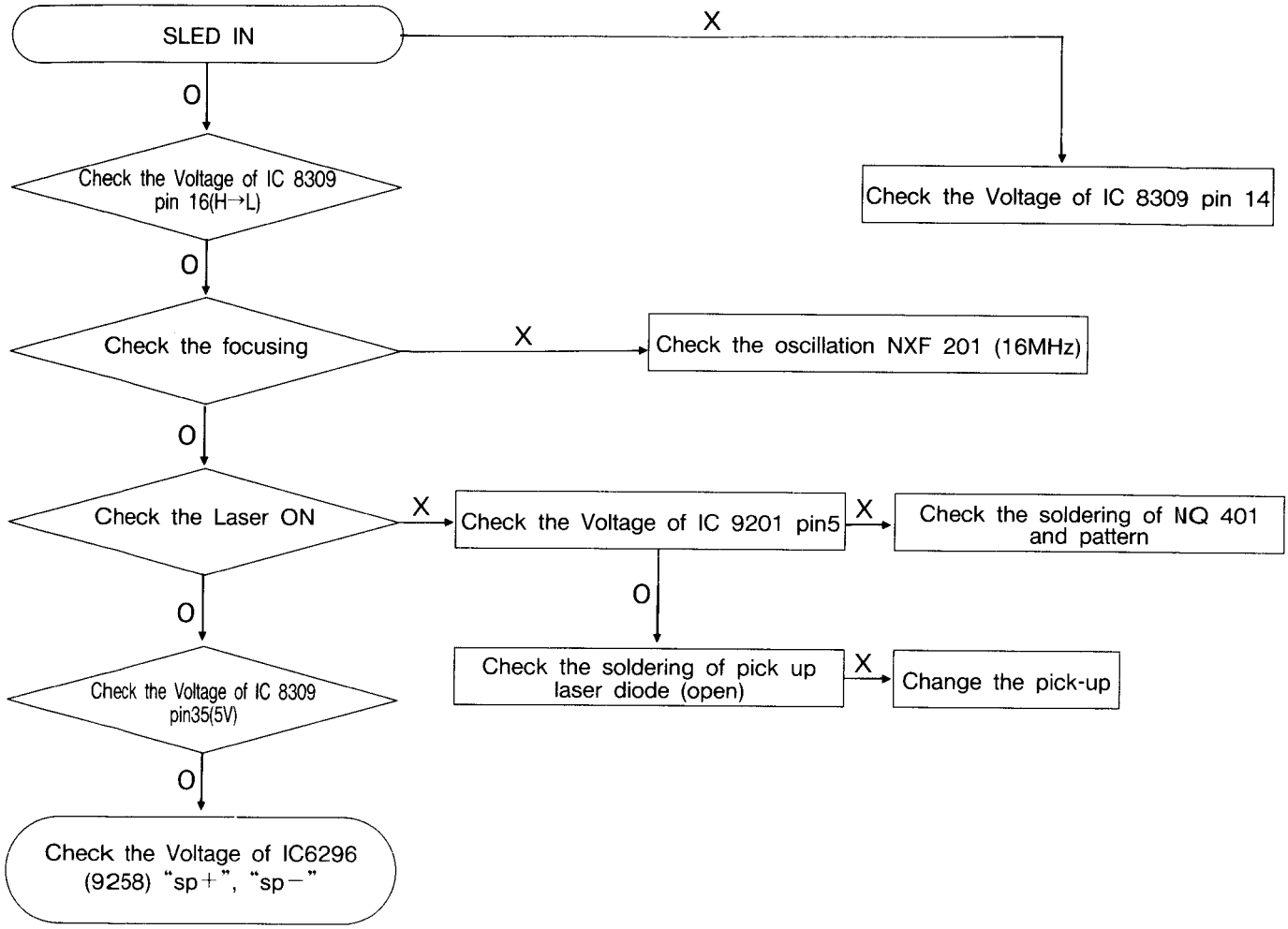
2) Compact Disc In operative



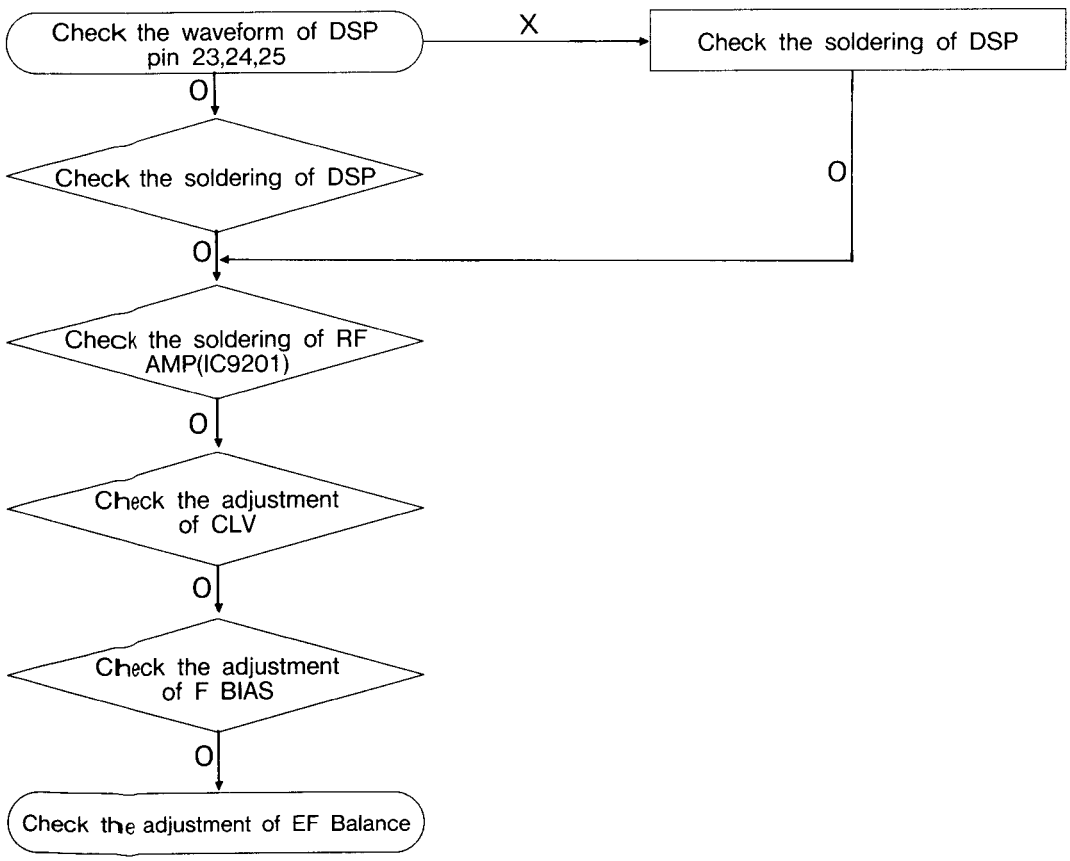
3) NO POWER



4) NO Rotalion



5) NO LEAD IN



ADJUSTMENT
AIN SECTION

(3)LW ADJUSTMENT

STEP	ITEM.	CONNECTION	SSG FREQ.	FREQ. SETTING	ADJUSTMENT POINT	RESULT & REMARK
1	LW frequency coverage adjustment	FIG. 4	----	146KHZ	OC9	TP4
2			----	290KHz	OTC3	TP4
3	LW tracking adjustment	FIG. 4	170KHz	170KHz	OC1	Maximum output
4			270KHz	270KHz	OTC1	

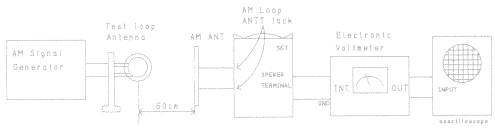


FIG. 5(LW TRACKING,LW IF ADJUSTMENT

(2)AM ADJUSTMENT

STEP	ITEM.	CONNECTION	SSG FREQ.	FREQ. SETTING	ADJUSTMENT POINT	RESULT & REMARK
1	AM frequency coverage adjustment	Connect DC voltmeter to TP1, TG	----	522KHZ	OL4	0.9V TP4
2			----	1611KHz	OTC4	9V TP4
3	Repeat step 1 and 2 sever times					
4	AM tracking adjustment	FIG. 4	594KHz	594KHz	OL2	Maximum output
5			1404KHz	1404KHz	OTC2	
6	Repeat step 3 and 4 several times					

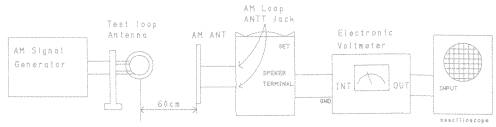
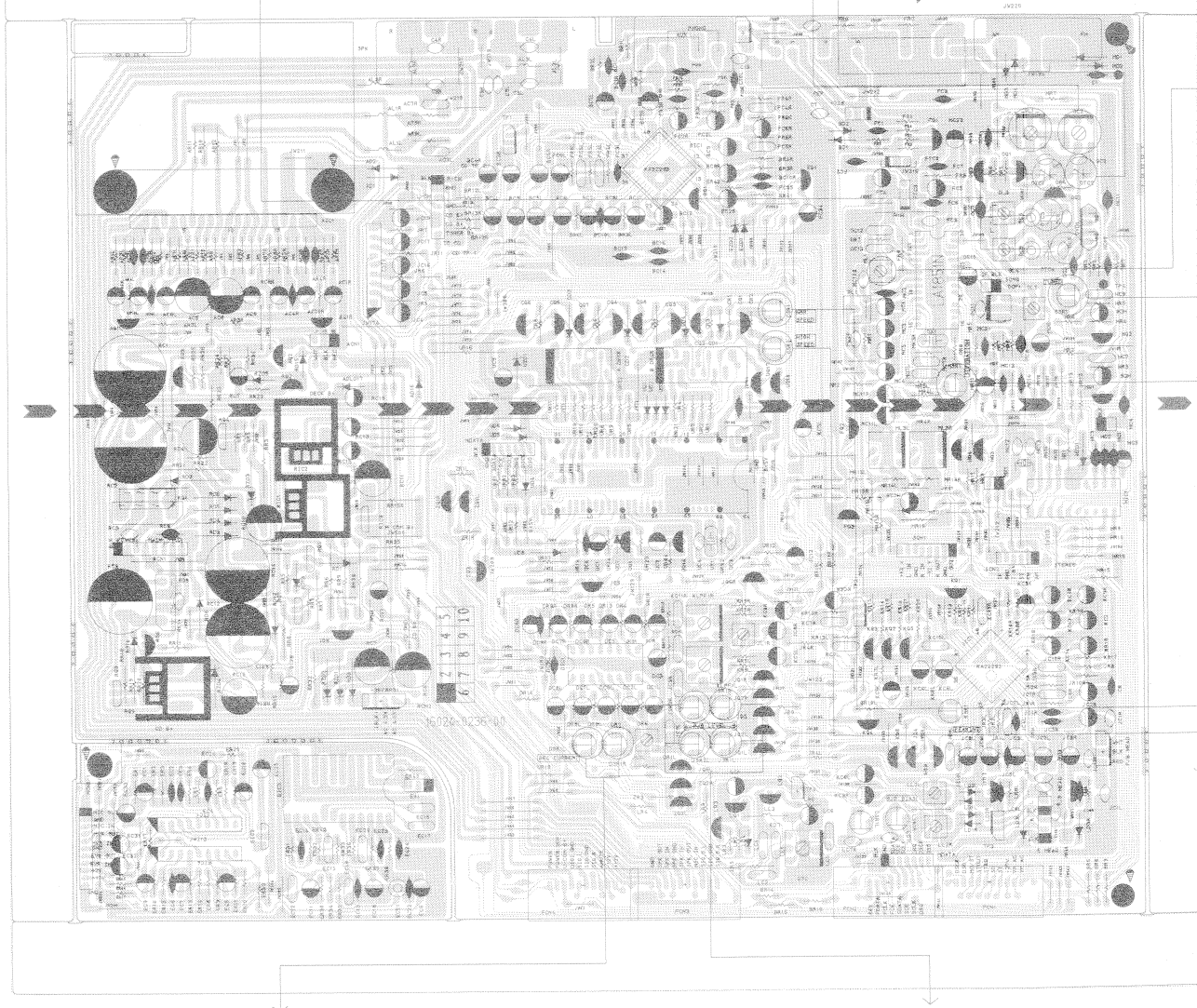


FIG. 4(AM TRACKING,AM IF ADJUSTMENT

MAX370.MAIN



(4)RECORD AND PLAYBACK ADJUSTMENT

※Set DOLBY NR SWITCH to off.

STEP	ITEM.	CONNECTION	PREPARATION	ADJUSTMENT POINT	RESULT & REMARK
1	Bias oscillation frequency adjustment	FIG. 4	Record MTT-551t in the DECK B. Press record button	LL1	105KHz TP3
2	Bias current adjustment signal current	FIG. 4	Record MTT-551t in the DECK B. Press record button	LSR1L LSR1R	VTVM 7V
	adjustment	FIG. 4(Apply 400hz 500mV sign wave to AUX input) TP SIGNAL		DSR1L DSL1R	VTVM 400mV +,-5%

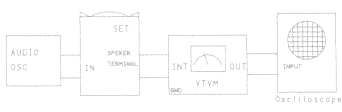


FIG. 4

(3) DOLBY LEVEL ADJUSTMENT

※Set DOLBY NR SWITCH to off.

STEP	ITEM.	CONNECTION	PREPARATION	ADJUSTMENT POINT	RESULT & REMA
1	Playback output level(DECK A) Adjustment	FIG. 2	Play MTT-150 in the DECK A	JSR2L JSR2R	TP1:200mV+,-1
2	Playback output level(DECK B) Adjustment	FIG. 2	Play MTT-150 in the DECK B	JSR1L JSR1R	TP1:200mV+,-1

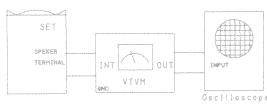
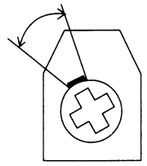


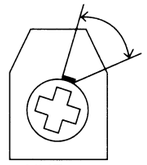
FIG. 2

2. COMPACT DISC PLAYER SECTION

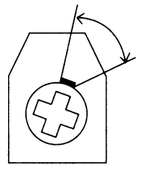
1) CLV ADJUSTMENT
10 : 1 damping probe.
(1) Turn power on without loading a disc.
(2) Connect NJW412 to GND
(3) Connect Heat Sink to GND and NJW224 to positive terminal on the Frequency Counter.
(4) Adjust NVR301 so that the frequency Counter reads 4.22 MHz± 0.01 MHz.
(5) Disconnect NJW412 to GND.


NVR301

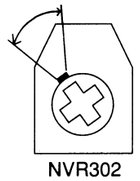
2) FOCUS BIAS ADJUSTMENT
(1) Turn power on without loading a disc.
(2) Set Oscilloscope Vol/Div to DC 100mV.
(3) Connect Vref to GND and NJW414 (F.E) to positive terminal on the oscilloscope.
(4) Adjust NVR401 so that the voltage is +200mV DC on the oscilloscope.


NVR401

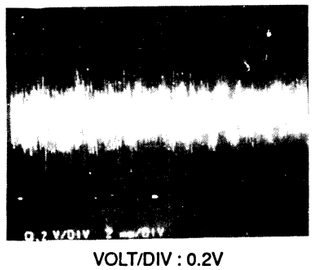
3) EF BALANCE ADJUSTMENT (Power On)
(1) Turn power on with loading a disc.
(2) Set Oscilloscope Time/Div to 2mS.
(3) Set Oscilloscope Volt/Div to 50mV.
(4) Connect Vref to GND and NJW413(T.E) to positive terminal on the oscilloscope.
(5) Adjust NVR302 all the way counter clockwise. (Intermihent sound)
(6) Ajust NVR402 so that the waveform in equally symmetrical above and below (A=B) the center.
(7) Adjust NVR302 so that sound comes out normally.


NVR402

4) TRACKING GAIN ADJUSTMENT (Power On)
(1) Turn power on with loading a disc.
(2) Connect Vref to GND and NJW413(T.E) to positive terminal on the oscilloscope.
(3) Press PLAY/PAUSE.
(4) Adjust NVR302 so that wareform is as shown on the figure below.

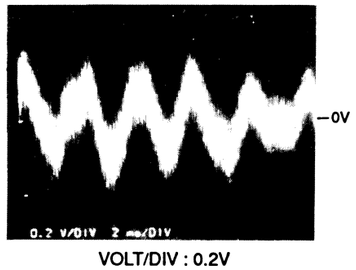

NVR302

(NORMAL WAVEFORM)



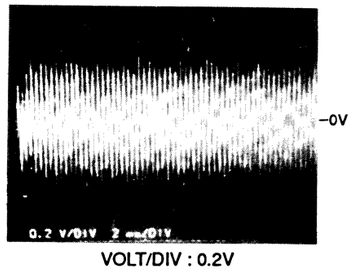
VOLT/DIV : 0.2V
TIME/DIV : 2mS

(LOW TRACKING GAIN)



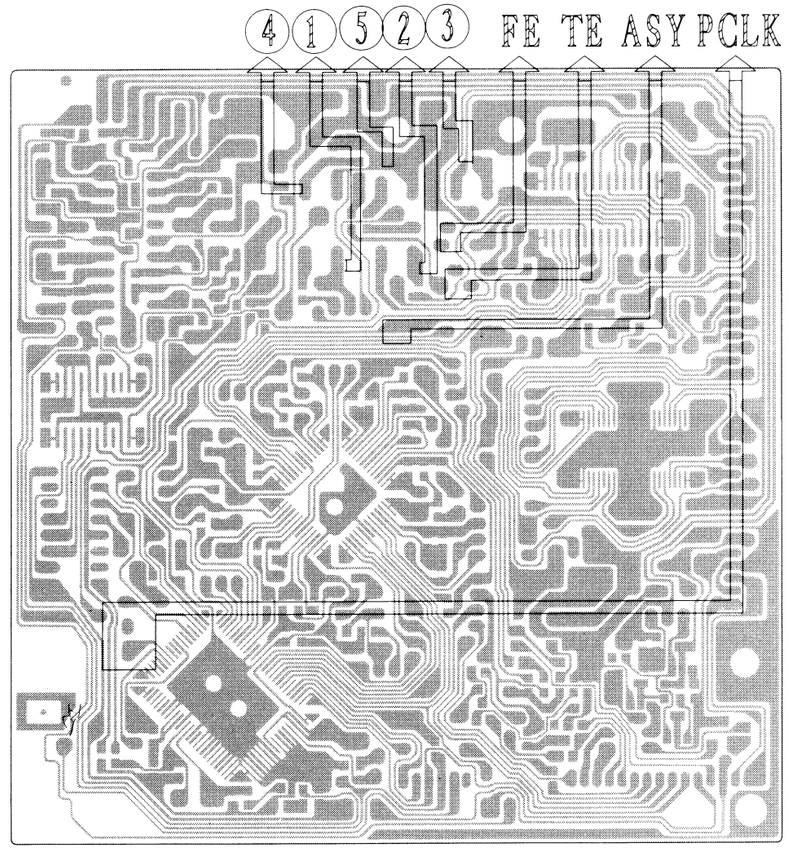
VOLT/DIV : 0.2V
TIME/DIV : 2mS

(HIGH TRACKING GAIN)

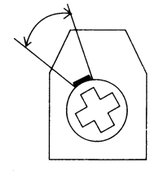


VOLT/DIV : 0.2V
TIME/DIV : 2mS

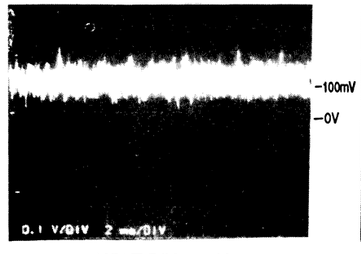
LOCATION OF ADJUSTMENT POINTS(MARKING SIDE)



5) FOCUS GAIN ADJUSTMENT (Power On)
(1) Turn power on with loading a disc.
(2) Connect Vref to GND and NJW414(E.F) to positive terminal on the oscilloscope.
(3) Press PLAY/PAUSE.
(4) Adjust NVR303 so that waveform is as shown in the figure below.

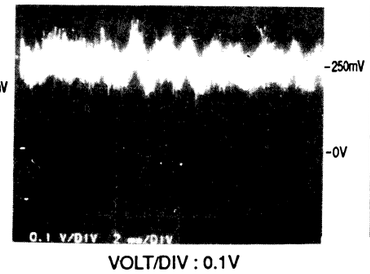

NVR303

(NORMAL WAVEFORM)



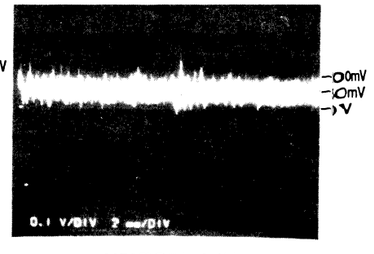
VOLT/DIV : 0.1V
TIME/DIV : 2mS

(LOW FOCUS GAIN)



VOLT/DIV : 0.1V
TIME/DIV : 2mS

(HIGH FOUCS GAIN)

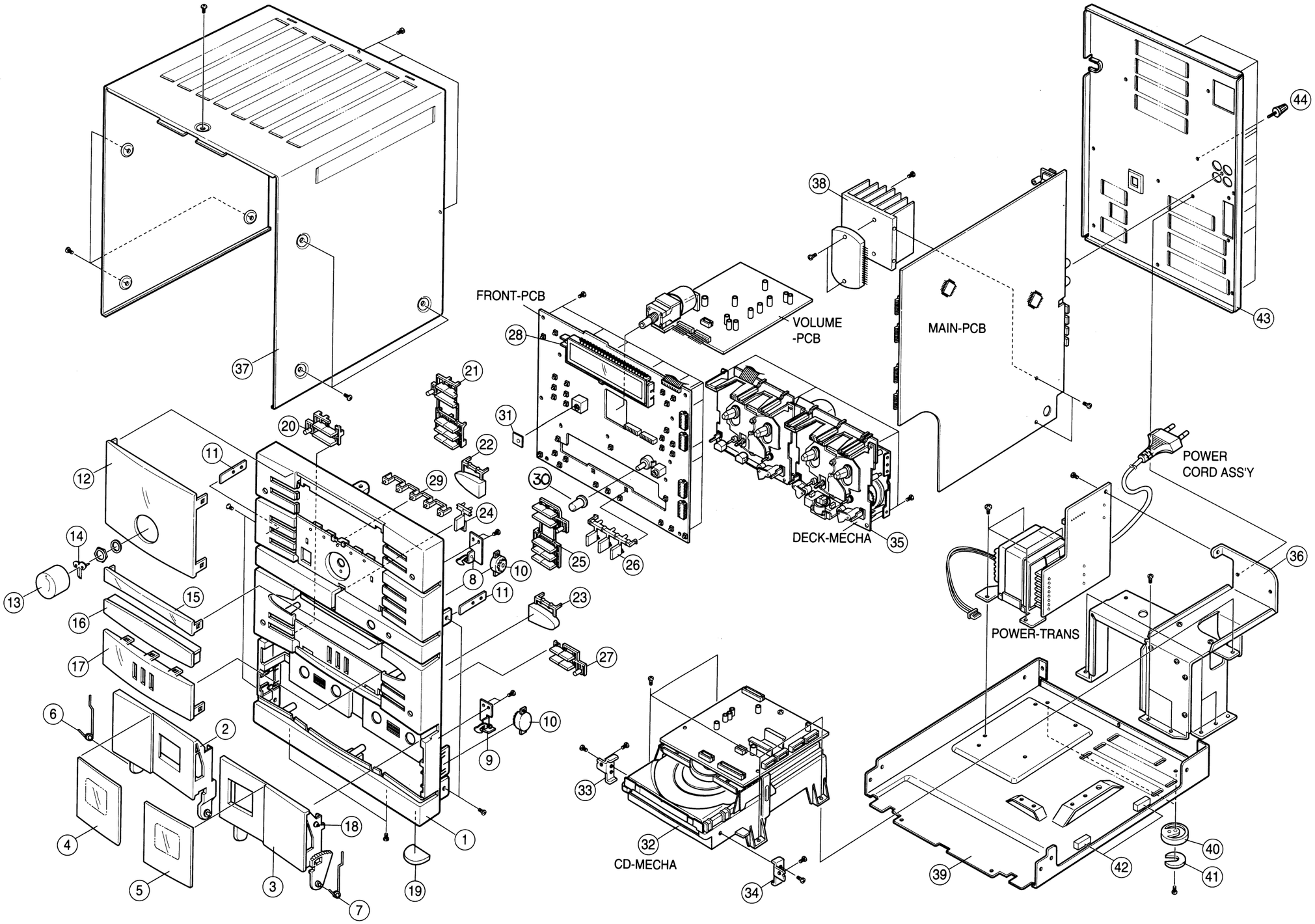


VOLT/DIV : 0.1V
TIME/DIV : 2mS

■ EXPLODED VIEW & PARTS LIST

1. MAIN SECTION

● EXPLODED VIEW



● MECHANICAL PARTS

(Service Available parts)

No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
1	12000-0128-02	CABINET-FRONT ; MAX370E BLK HIPS 94HB	1	
2	14042-0064-02	DOOR-CST (L) ; MAX370E BLK ABS 94HB	1	
3	14042-0065-02	DOOR-CST (R) ; MAX370E BLK ABS 94HB	1	
4	14074-0147-02	WINDOW-CST (L) ; MAX370E T3 TRP ACRYL	1	
5	14074-0148-02	WINDOW-CST (R) ; MAX370E T3 TRP ACRYL	1	
6	12724-0084-00	SPRING-EJECT (L) ; TS SUS PI0.7 MAX477	1	
7	12724-0085-00	SPRING-EJECT (R) ; TS SUS PI0.7 MAX477	1	
8	19113-0016-00	ASS'Y-LATCH (L ; MAX460Z	1	
9	19113-0017-00	ASS'Y-LATCH(R) ; MAX460Z	1	
10	15009-552-510	DAMPER-ASS'Y ; POM BLK T110 KIECO, MAX530	2	
11	16624-581-110	BRKT-SIDE ; SECC 1.0T MQ530R	2	
12	14073-0144-02	WINDOW-TUNER ; MAX370E T3 PNK ACRYL	1	
13	14083-0350-00	KNOB-VOLUME ; MAX370 BLK ABS 94HB	1	
14	12714-0021-00	LENS-VOLUME ; MAX370 ACRYL	1	
15	14073-0145-00	WINDOW-CD (UP) ; MAX370 T3 PNK ACRYL	1	
16	14043-0066-02	DOOR-CD ; MAX370E BLK ABS 94HB	1	
17	14073-0146-02	WINDOW-CD DOWN ; MAX370E T3 PNK ACRYL	1	
18	11404-0032-00	SHAFT-DOOR ; MBS D5 L7 MM-460Z	1	
19	13054-0067-00	CUSHION-FOOT (F) ; MAX370 BLK RUBBER SPO	2	
20	14083-0332-00	KNOB-DECK (REW) ; MAX370 BLK ABS 94HB	1	
21	14083-0328-00	KNOB-TUNING ; MAX370 BLK ABS 94HB	1	
22	14084-0335-02	KNOB-CD (OPEN) ; MAX370E BLK ABS 94HB	1	
23	14084-0336-02	KNOB-CD (PLAY) ; MAX370E BLK ABS 94HB	1	
24	14084-0334-00	KNOB-POWER ; MAX370 BLK ABS 94HB	1	
25	14083-0329-00	KNOB-PRESET ; MAX370 BLK ABS 94HB	1	
26	14084-0333-00	KNOB-DECK (PLAY) ; MAX370 BLK ABS 94HB	1	
27	14083-0331-00	KNOB-CD (SKIP) ; MAX370 BLK ABS 94HB	1	
28	13323-0089-00	HOLDER-FLT ; MAX370 BLK ABS	1	
29	12714-0020-00	LENS-EQ ; MAX370 ACRYL	1	
30	14084-0330-00	KNOB-BALANCE ; MAX370 BLK ABS 94HB	1	
31	13314-0102-00	COVER-REMOCON ; MAX370 T0.3 BLK FLET	1	
32	*G3SD/4	ASS'Y PACK CD ; G3SD MQ-370	1	
33	13014-0114-00	BRKT-CD, L ; MAX370 SECC 1.0T	2	
34	13014-0115-00	BRKT-CD, R ; MAX370 SECC 1.0T	2	
35	19049-0003-00	ASS'Y- DECK TAPE ; MAX370	1	
36	19112-0076-00	ASS'Y-FRAME ; MAX370	1	
37	12001-0129-00	CABINET-TOP ; MAX370 T0.75 BLK V/STEEL	1	
38	11123-0030-00	HEAT-SINK ; MAX370 142G 100-J	1	
39	12202-0079-00	CHSSIS-BOTTOM ; MAX370 T0.8 WHT SECC	1	
40	13004-0008-00	FOOT ; MAX477 BLK ABS 94HB	2	
41	13004-0012-00	FOOT-RUBBER (S) ; MAX477 BLK T3 RUBBER/S	2	
42	13054-0042-00	CUSHION-CENTER CVM-33S T7 BLK EVA SPO	2	
43	12202-0080-02	CHASSIS-REAR ; MAX370E T0.8 WHT SECC	1	
44	13104-501-630	TERMINAL-SCREW ; SPC1+ABS	1	

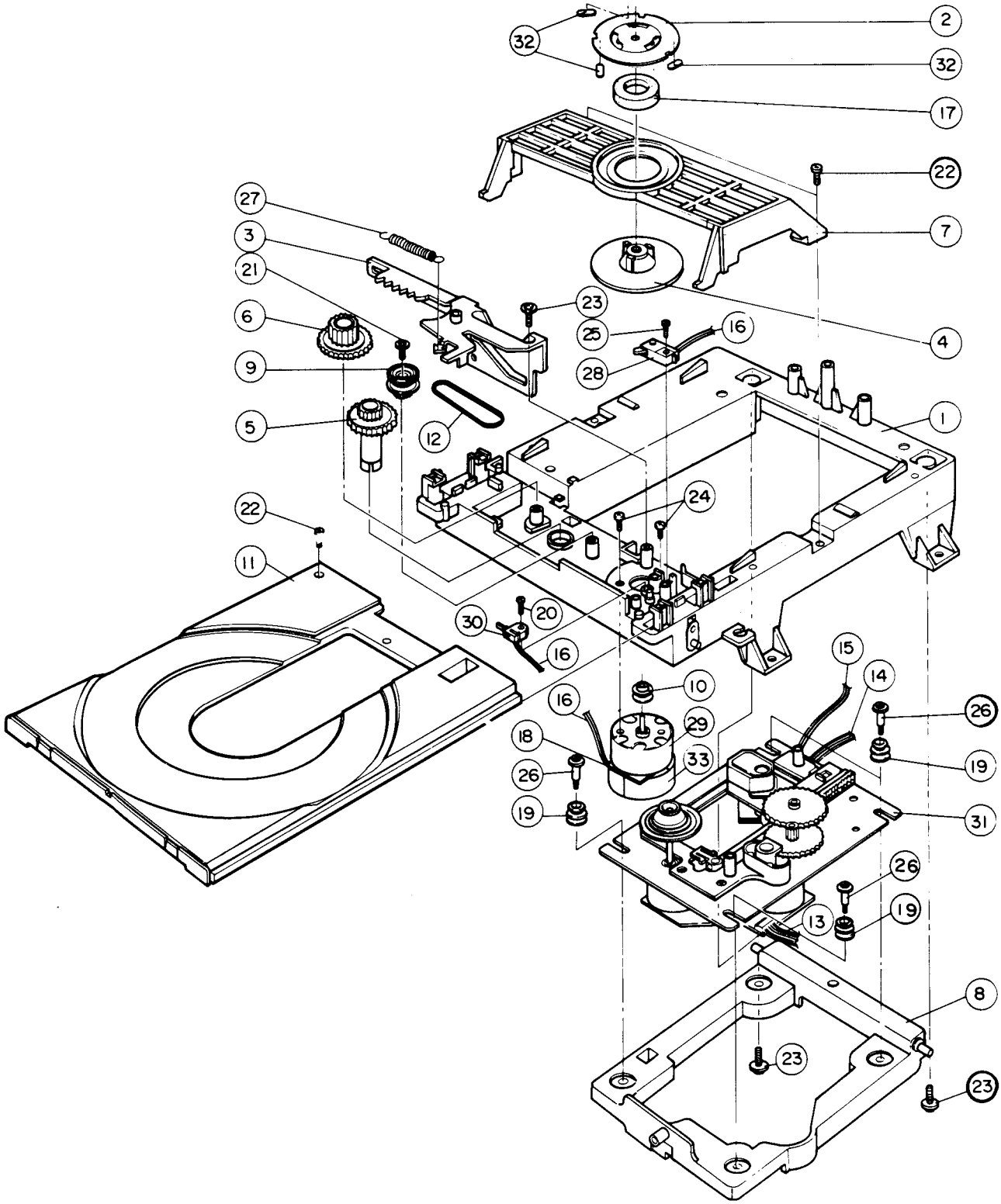
2. CDP DECK (CMS-M5M6C)

● CDP DECK PARTS LIST

(Service Available Parts)

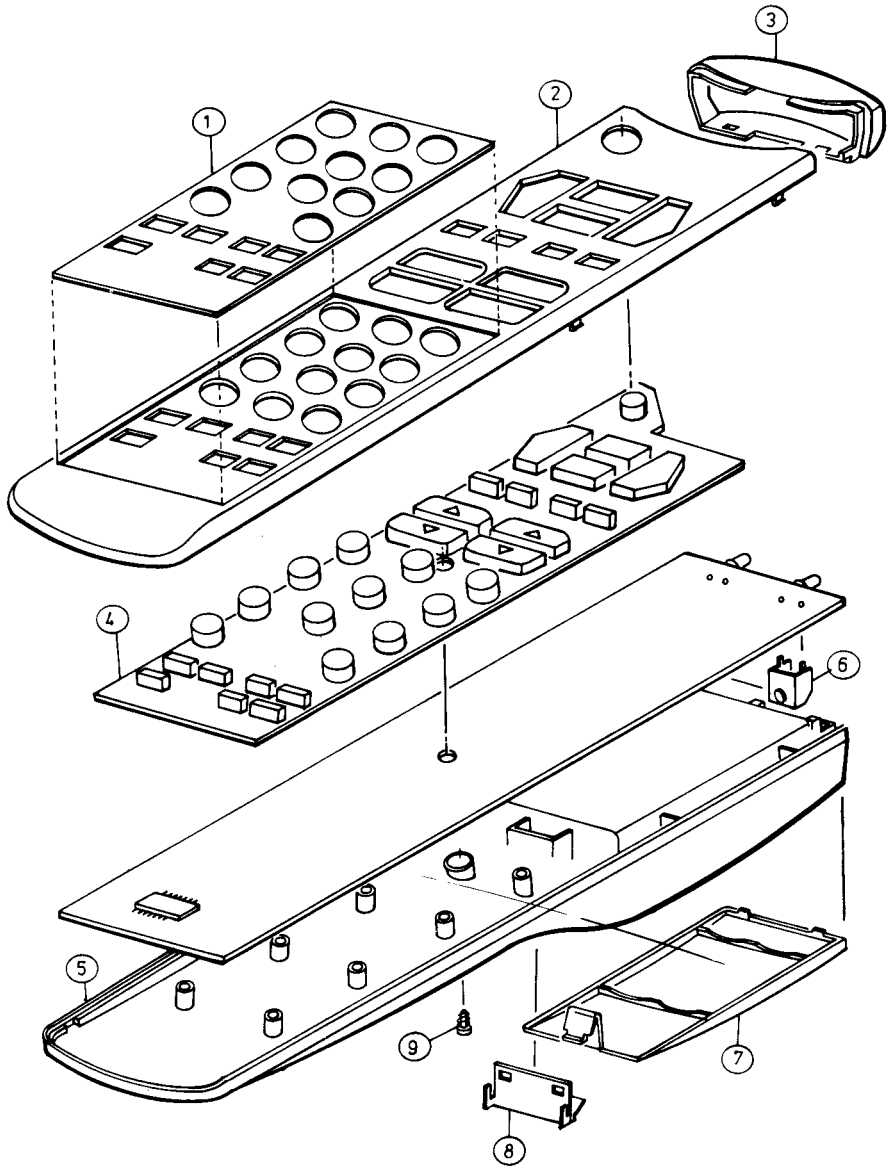
No.	CODE No.	DESCRIPTION & SPECIFICATION	QTY	REMARK
		DECK-CD ASS'Y ; CMS-M5M6C		ASS'Y
1	12201-0013-01	BASE-MAIN ; ABS BLACK	1	
2	16623-504-420	BRKT-CHUCK ; SBHG-1 T0.5	1	
3	11583-0001-00	CAM ; PC BLACK CMS-M1	1	
4	16603-511-810	CHUCK-PLATE ; ABS TGF 20%	1	
5	11474-0006-00	GEAR (A) ; NYLON12 M0.5/M0.5 Z17/Z45 SP NTR	1	
6	11474-0007-00	GEAR (B) ; P.O.M M0.5/M0.8 Z19/Z46 SP BLK	1	
7	13329-0013-00	HOLDER-CHUCK ; ABS BLACK	1	
8	11532-0004-00	LEVER-LIFTER DECK ; ABS BLK CMS-M1	1	
9	11504-0001-00	PULLEY-GEAR ; P.O.M D12/M0.51 Z17 SP BLK	1	
10	11504-0002-00	PULLEY-MOTOR ; P.O.M D4 BLK	1	
11	13602-0001-01	TRAY-CA ; ABS BLK	1	
12	11494-0001-00	BELT-PULLEY ; NEOPLEN FR W1.5 T1.5/L78.8	1	
13	13070-046-125	CNNCTR-WIRE/BN ; 6P	1	
14	13076-048-020	CNNCTR-WIRE/BN ; 8P	1	
15	13052-902-020	CNNCTR-WIRE/BN ; 8P SHIELD	1	
16	13029-064-130	CONNECTOR-WIRE ; 6P	1	
17	14014-500-600	MAGNET-CHUCK ; FERRITE 6P	1	
18	16024-0083-00	PCB-MOTOR ; XPC 103X99	1	
19	16174-503-410	RUBBER CD ; SI-RUBBER WHT45	4	
21	17008-120-043	SCREW-PH ; +M2X4 FE FZB	2	
22	17458-130-081	SCREW ; TAP 3X8 FE FZY	3	
23	17154-100-640	SCREW TAP FE FZY RH SPEX ; 2S 3X8 FE FZB	3	
24	17008-126-041	SCREW ; M2.6X4 FE FZY	2	
26	15104-531-710	SHAFT-CD ; FE FZY 2.6X10.5	4	
27	12724-0010-00	SPRING-CAM ; STSW PI0.23	1	
28	B3022-0004	SWITCH-LEAF ; MLS-1	1	
29	B3070-0002	MOTOR-DC ; RF-500TB-12560	1	
30	13573-901-050	SWITCH-MICRO L ; SPPB-11	1	
31	CMS-V30A	DECK-CD ; CMS-V30A	1	
32	13054-0026-00	CUSHION-BRKT ; FELT 4.5X10	3	
33	13014-0062-00	BRKT-SHIELD ; SI0.35t	1	

● CDP DECK (CMS-M5M6C)



3. REMOTE CONTROL

● EXPLODED VIEW

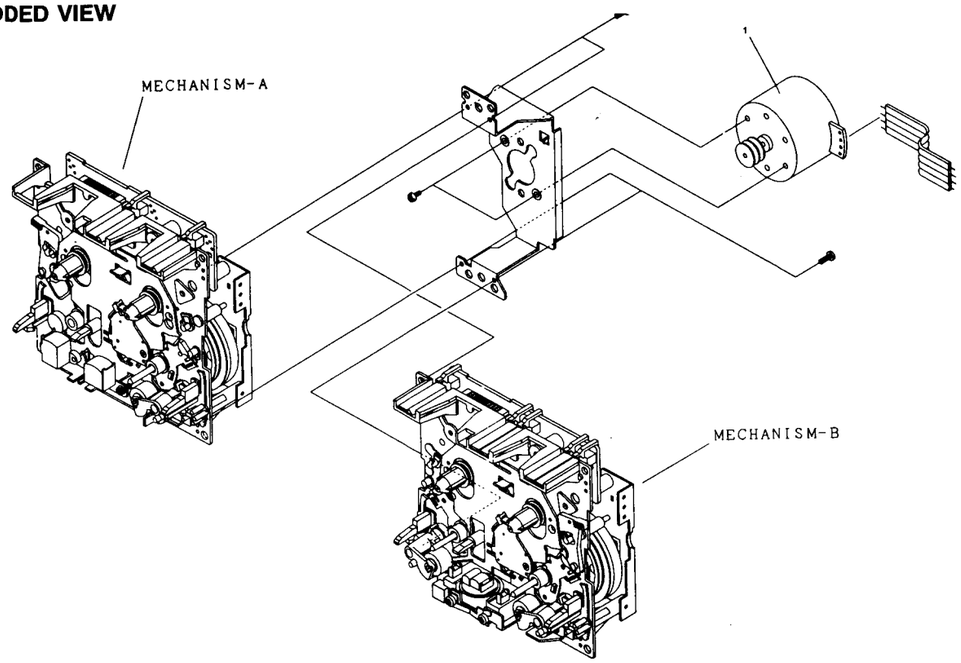


● MECHANICAL PARTS

No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
	19239-0015-02	REMOCON ASS'Y ; SMALL TYPE MAX370	1	ASS'Y
1	14014-0005-00	INLAY-REMOCON ; PC T0.5 BLK MQ360R	1	
2	12002-0054-00	CABINET-TOP ; ABS94HB T2 BLK MQ360R	1	
3	12713-0008-00	LENS-REMOCON ; PC MQ360R T2.5	1	
4	14083-0136-00	KNOB-REMOCON ; SILICON BLK MQ360R	1	
5	12001-0055-00	CABINET-BOTTOM ; ABS94HB T2 BLK MQ360R	1	
6	12724-0046-00	SPRING-BATTERY ; PS SUS T0.15 W22.3 L12	2	
7	13313-0026-00	COVER-BATTERY ; ABS94HB T1.5 BLK MQ360	1	
8	12724-0047-00	SPRING-BATTERY ; PS SUS T0.3 W15.5 L9M	1	
9	17158-220-063	SCREW TAP BH, SPEC 2S-S×6 FZB	1	
	11449-518-101	CONDENSER AXIAL-LED ; 50V UP050	2	
	12149-401-150	TRANSISTOR ; KSD 471-Y, TAPE	1	
	14539-504-030	CERAMIC-RESONATOR ; CSB455EBL	1	
	B4012-0014	IC-LINEAR ; LC7464M-8117 SOP REM	1	

4. CASSETTE DECK ASS'Y SECTION

● EXPLODED VIEW

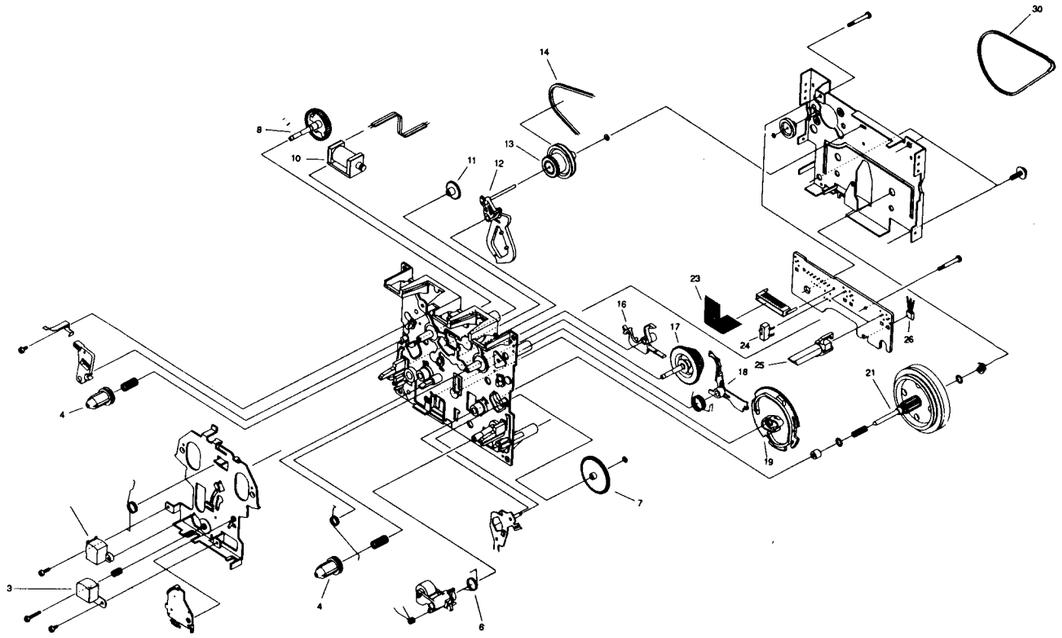


● CASSETTE DECK PARTS CWA419FR 17159-0052-00

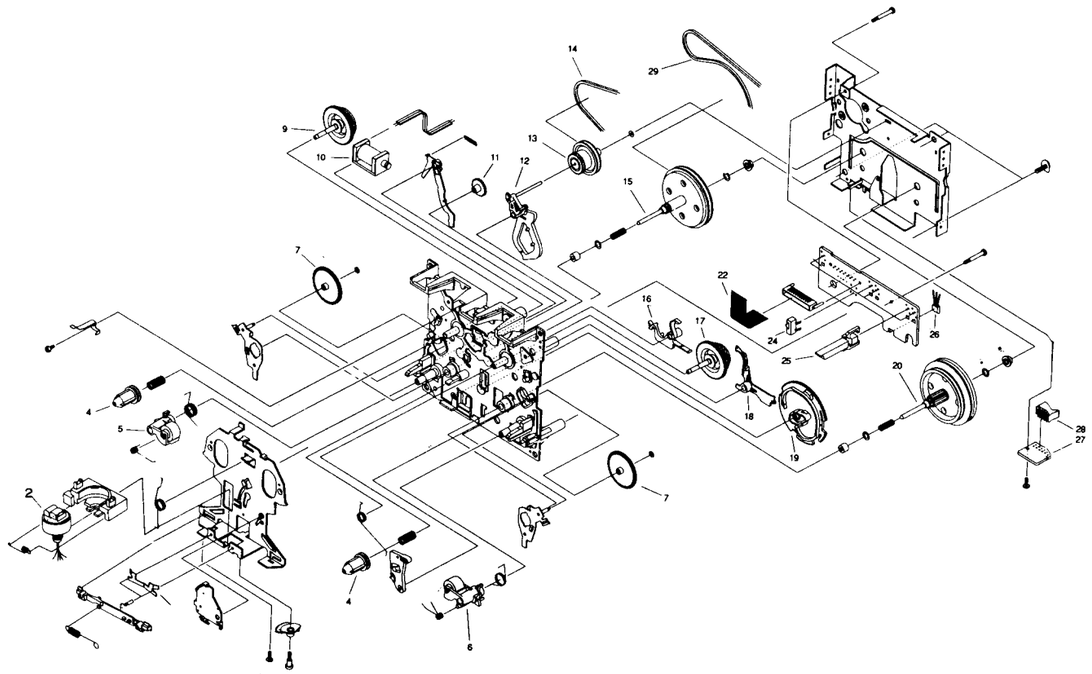
(Service Available Parts)

No.	자재번호	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
1	10000-503-002	ASS'Y MOTOR ; SHU2L	1	
2	10000-524-023	ASS'Y HOLDER HEAD ; 22-093-4269	1	B DECK
3	10000-523-008	R/P HEAD ; MS15RAA2NI	1	A DECK
4	10000-611-009	CAP REEL ; 22-222-4041	4	
5	10000-611-010	ASS'Y PINCH ARM L ; 22-093-4149	1	B DECK
6	10000-611-012	ASS'Y PINCH ARM R ; 22-222-4150	2	
7	10000-611-057	GEAR PLAY ; 22-222-4282	3	
8	10000-611-015	REEL GEAR ; 22-222-3030	1	A DECK
9	10000-611-017	ASS'Y SUB REEL L ; 22-093-3071	2	B DECK
10	10000-611-018	SOLENOID ; 07-W021C	2	
11	10000-611-021	GEAR FF ; 22-222-4048	2	
12	10000-611-022	ASS'Y ARM FR ; 22-093-4061	2	
13	10000-611-023	ASS'Y PULLEY FR ; 22-093-3060	2	
14	10000-611-024	BELT FR ; 22-083-4059	2	
15	10000-611-026	ASS'Y FLYWHEEL L2 ; 22-093-3142	1	B DECK
16	10000-611-028	ARM BRAKE ; 22-239-3028	2	
17	10000-611-029	ASS'Y SUB REEL R ; 22-093-4151	2	
18	10000-611-030	ARM TRIGER ; 22-268-3008	2	
19	10000-611-031	GEAR CAM ; 22-221-2090	2	
20	10000-611-033	ASS'Y FLYWHEEL R2 ; 22-093-3141	1	B DECK
21	10000-611-027	ASS'Y FLYWHEEL R ; 22-093-3050	1	A DECK
22	10000-611-061	WIRE(13P) ; 300mm	1	B DECK
23	10000-611-062	WIRE(11P) ; 300mm	1	A DECK
24	10000-611-038	SWITCH MODE ; 04-MPU10101MBO	2	
25	10000-611-039	SWITCH LEAF ; 04-MTS1004 1MVJ1	6	
26	10000-611-040	HALL IC ; 00-LB9051A	2	
27	10000-611-046	PC BOARD ; 22-070-4046	1	B DECK
28	10000-611-047	HOUSING ; 00-S5 BEH	1	B DECK
29	10000-611-045	BELT MAIN ; 02-083-4072	1	B DECK
30	10000-611-049	BELT MAIN ; 02-083-4071	1	A DECK

1) A DECK (R/P DECK)

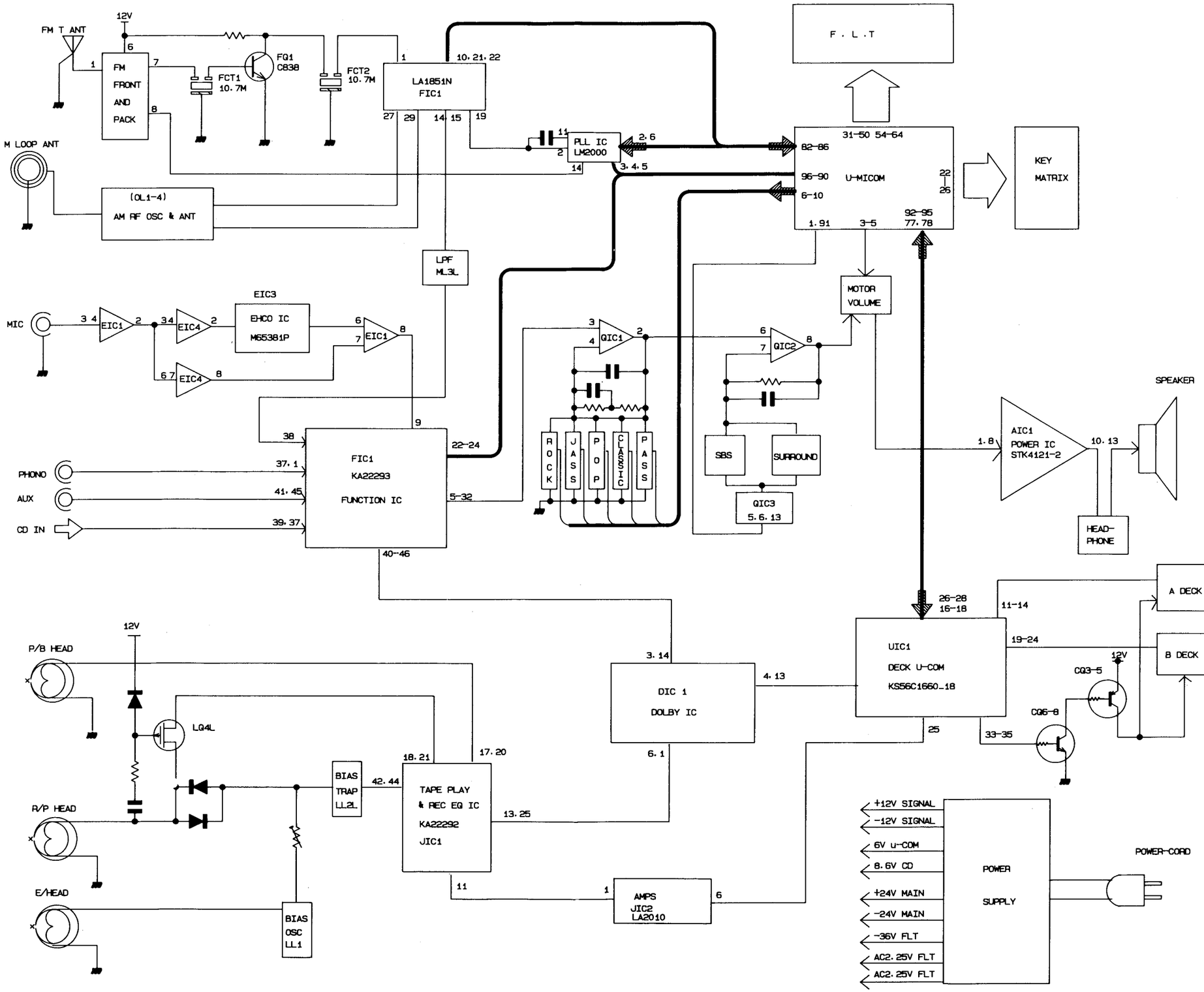


2) B DECK (P/B DECK)

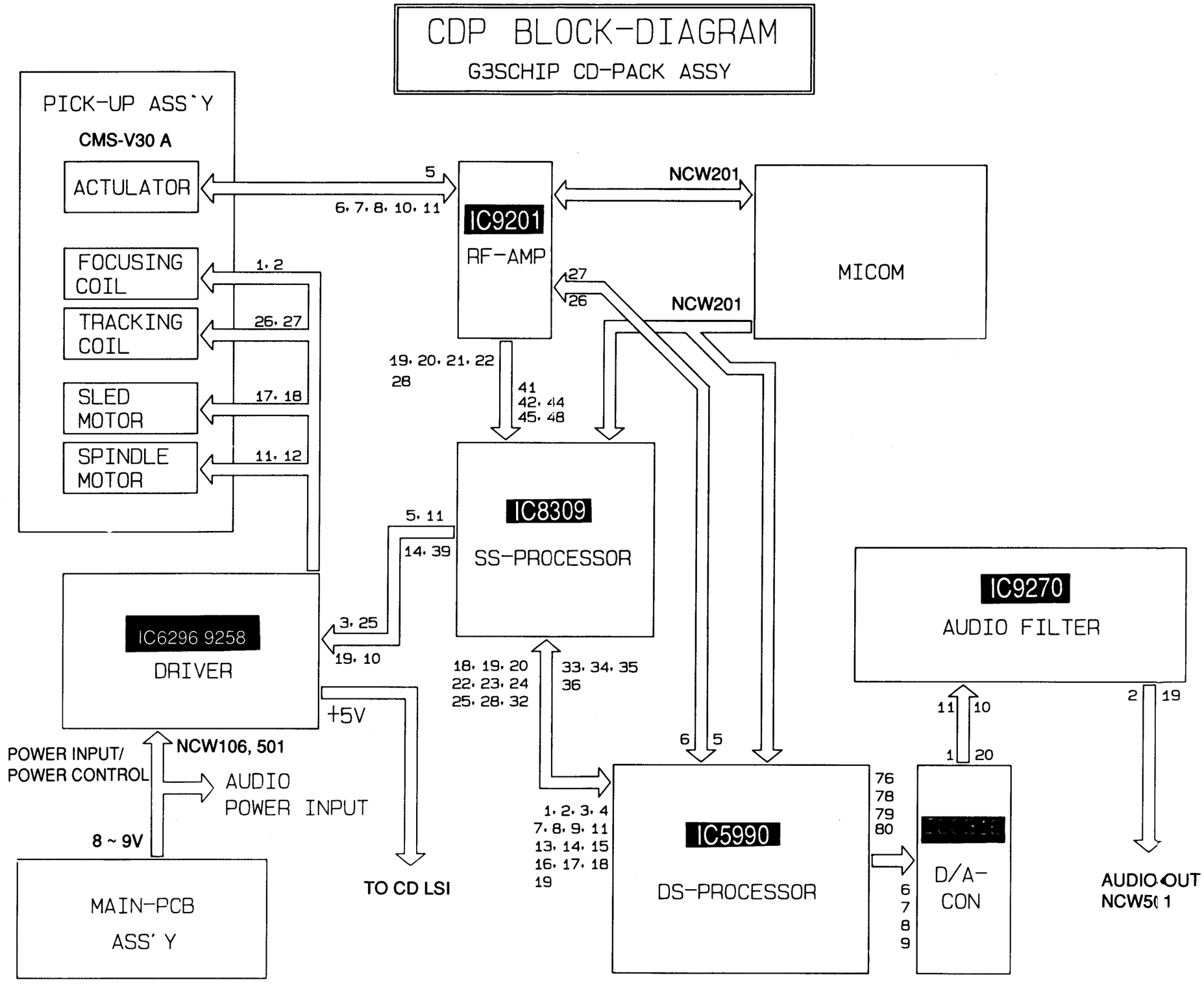


■ BLOCK DIAGRAM

1. MAIN SECTION



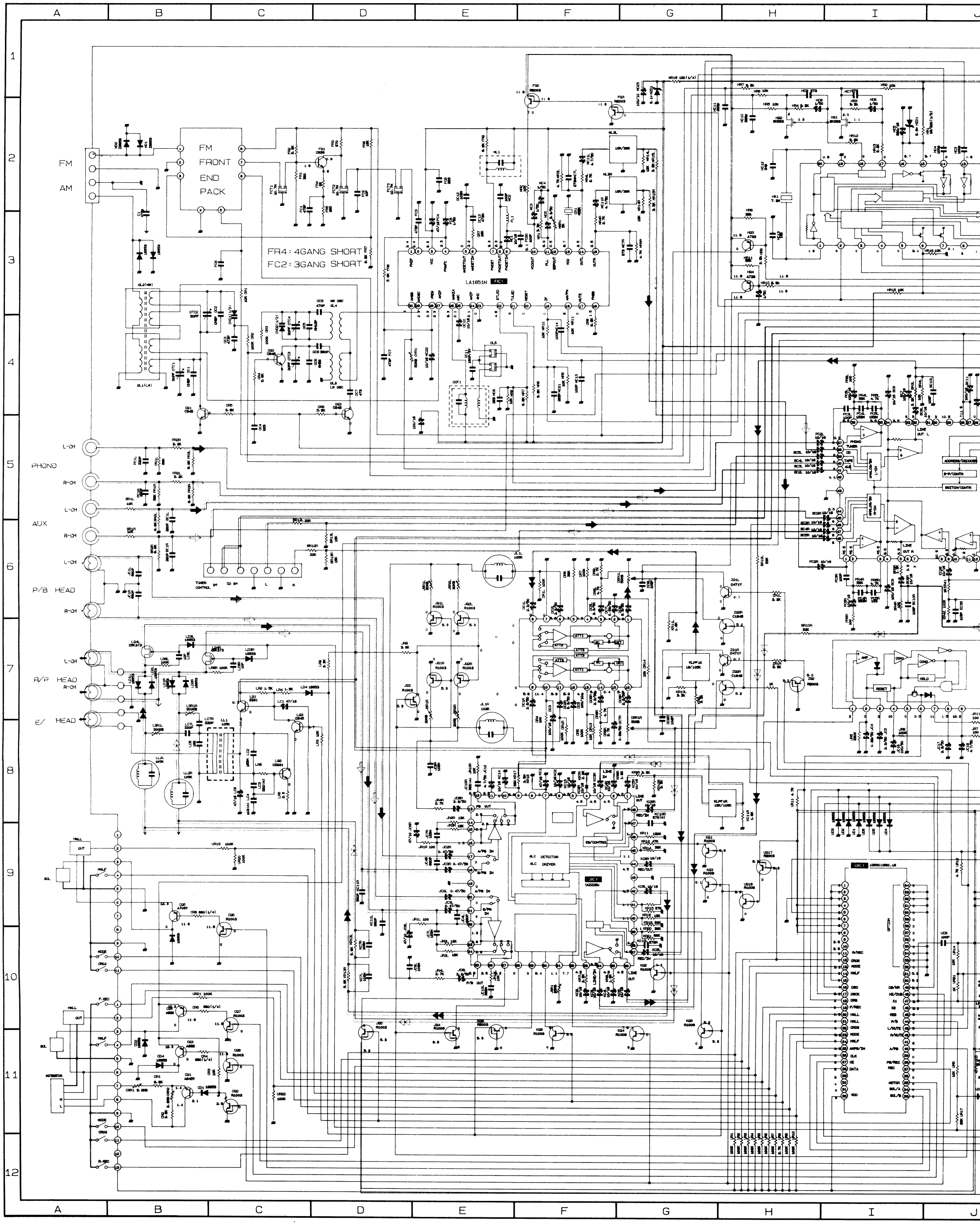
2. CD PLAYER SECTION



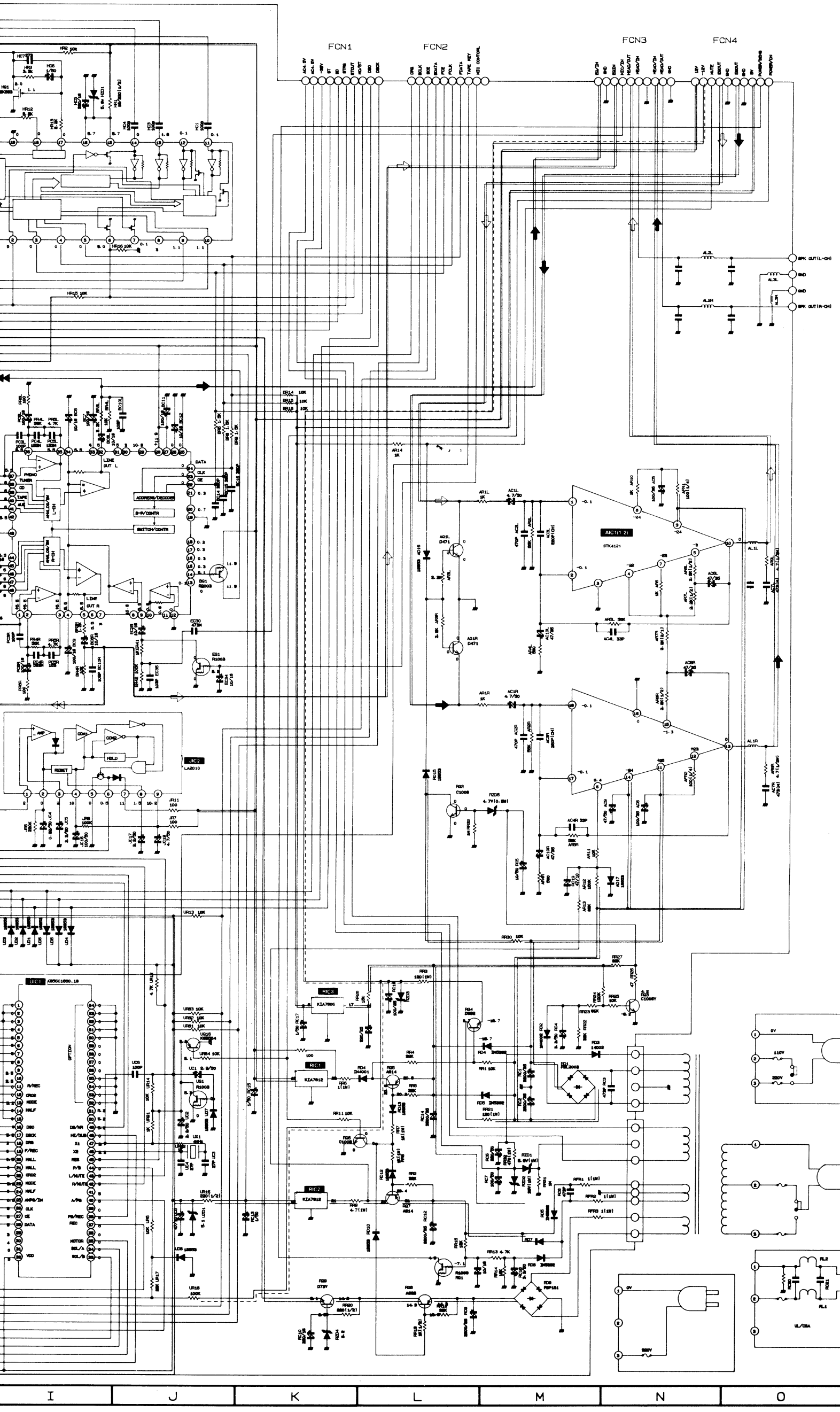
■ SECHEMATIC DIAGRAM

1. MAIN SECTION

1. The unit of all resisto
2. The unit of all capac



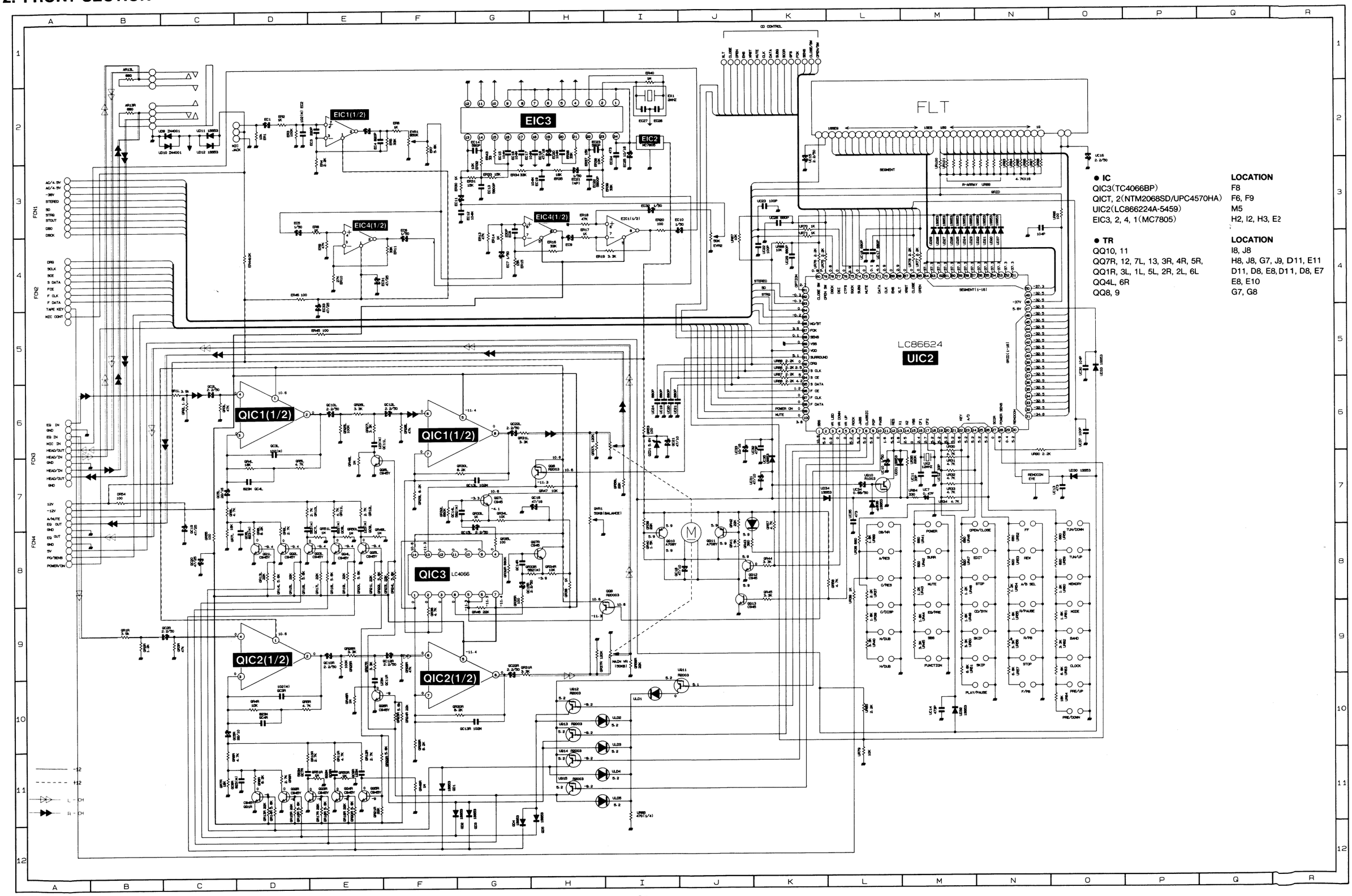
1. The unit of all resistors is Ω unless otherwise stated. (K : KΩ, M : MΩ) All resistors are 1/4W or 1/8W unless otherwise stated.
2. The unit of all capacitors is μF unless otherwise stated. (P : PF)
3. The schematic diagram is subject to change upon imporvement without prior notice.
4. ⚠ indicates parts for circuit safe guarding purposes. Therefore, when replacing, be sure to use specified parts onl



● IC	LOCATION
RIC1, 2(MC7812C/KIA7812P)	K10, 11
FIC1(LA1851N)	E3
JIC1(KA22292)	F9
AIC1(STK4121-2)	N5
RIC3(MC7806)	K9
UIC1(KS56C1660)	I9
JIC2(LA2D10)	J7

● TR	LOCATION
RQ5, 7, 8	L10, 11, 12
CQ3, 4, 5	B11, 10, 9
HQ3, 4	H3
UQ16	J9
FQ1	D2
LQ3, CQ1	C7, B11
LQ1, 2	C7, 8
RQ2, 3, 6	L8, N9, K10
RQ9	K12
AQIL, R, ZQIL, R	L6, H6, H7
RQ4	L9

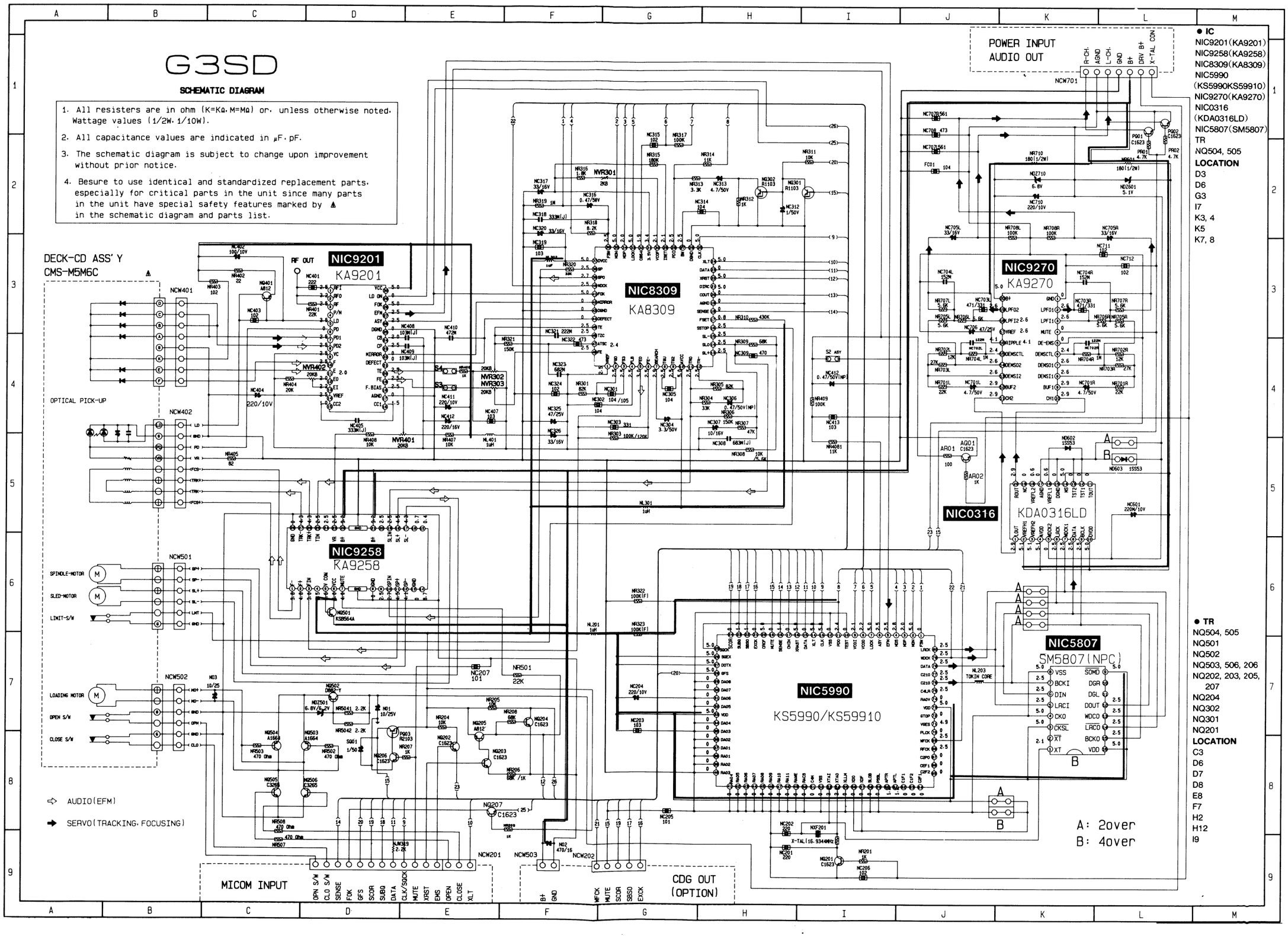
2. FRONT SECTION



● IC	LOCATION
QIC3(TC4066BP)	F8
QICT, 2(NTM2068SD/UPC4570HA)	F6, F9
UIC2(LC866224A-5459)	M5
EIC3, 2, 4, 1(MC7805)	H2, I2, H3, E2

● TR	LOCATION
QQ10, 11	I8, J8
QQ7R, 12, 7L, 13, 3R, 4R, 5R,	H8, J8, G7, J9, D11, E11
QQ1R, 3L, 1L, 5L, 2R, 2L, 6L	D11, D8, E8, D11, D8, E7
QQ4L, 6R	E8, E10
QQ8, 9	G7, G8

3. CD PLAYER



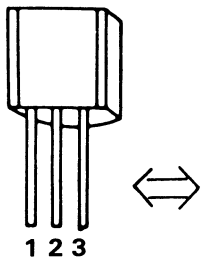
● **IC**
NIC9201(KA9201)
NIC9258(KA9258)
NIC8309(KA8309)
NIC5990
(KS5990KS59910)
NIC9270(KA9270)
NIC0316
(KDA0316LD)
NIC5807(SM5807)
TR
NQ504, 505
LOCATION
D3
D6
G3
I7
K3, 4
K5
K7, 8

● **TR**
NQ504, 505
NQ501
NQ502
NQ503, 506, 206
NQ202, 203, 205, 207
NQ204
NQ302
NQ301
NQ201
LOCATION
C3
D6
D7
D8
E8
F7
H2
H12
I9

■ IC & TR INTERNAL DIAGRAM

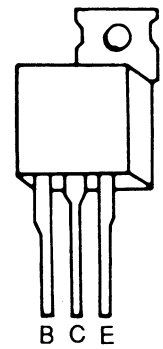
1. MAIN

● TR

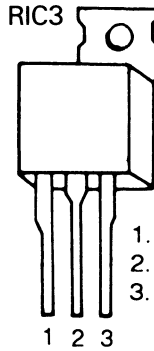


TR	1	2	3
KSR2458, KSR1003 KSR2004, KSR1002	E	C	B
KSC945, KSC1008 KSA733, KSA708 KSC838	E	B	C

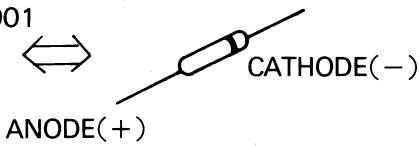
● TR : KSD-73Y



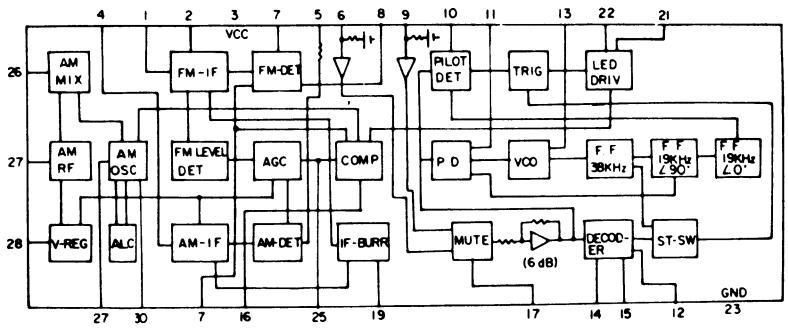
● MC7806 (REGULATOR IC) : RIC3



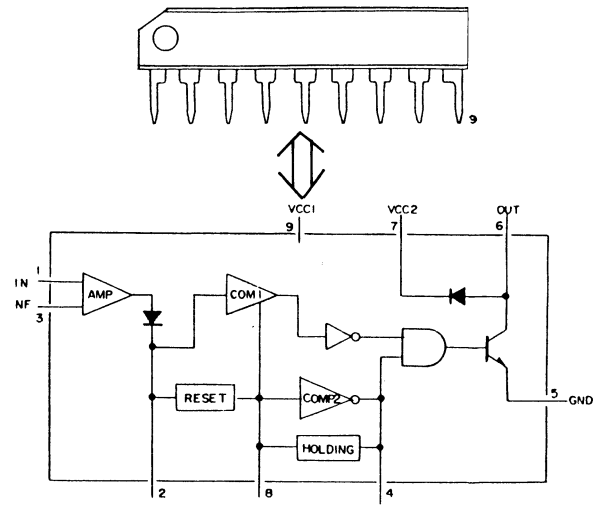
● DIODE 1N4148M/1SS53, IN4001
ZENER DIODE



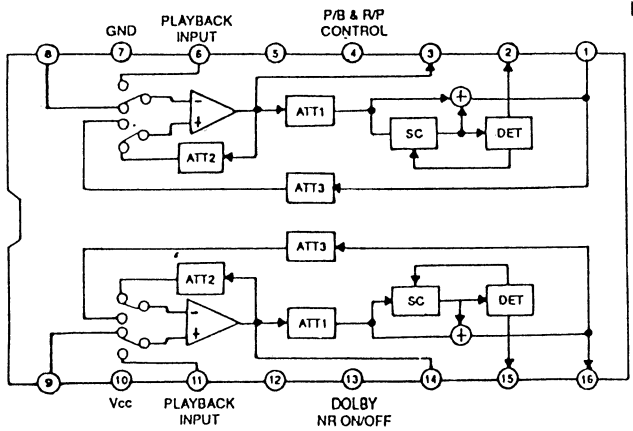
● LA1851N(FM, AM, IF IC) : FIC1

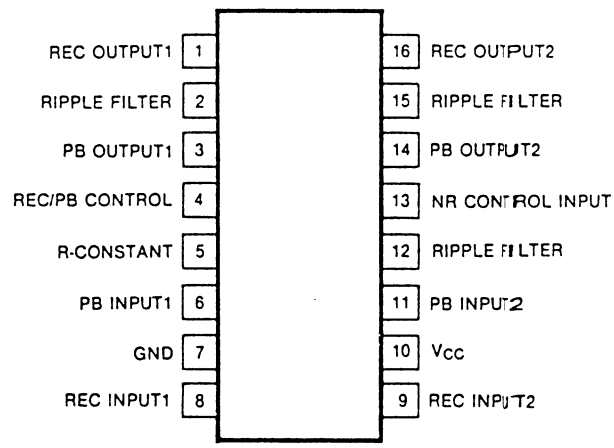


● LA2010(AMPS IC) : JIC2

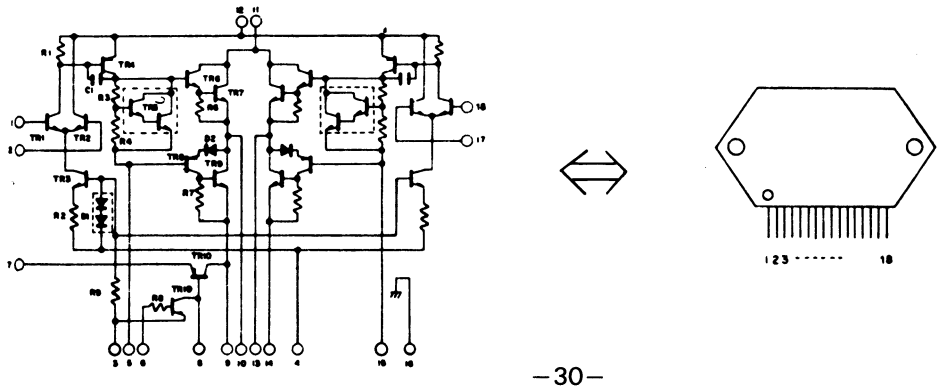


● KA2271(DOLBY IC) : DIC1

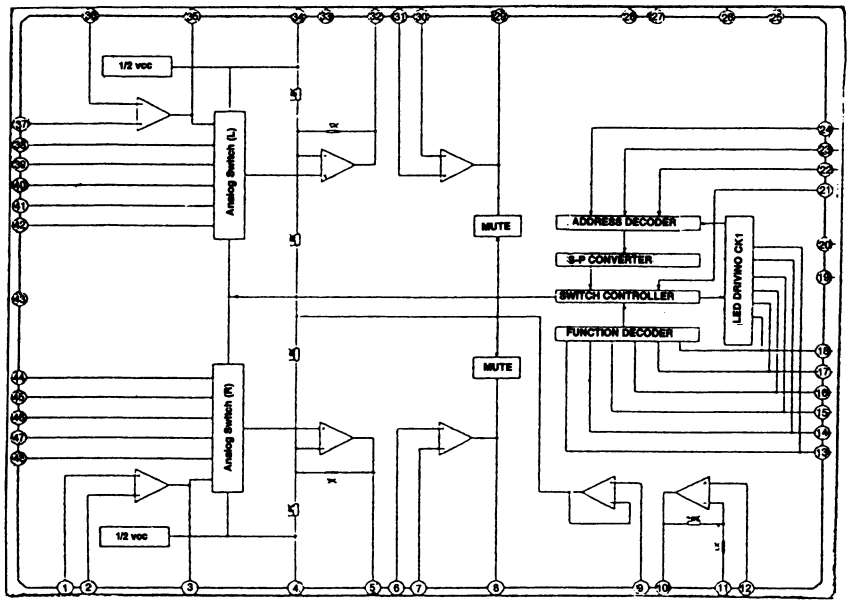




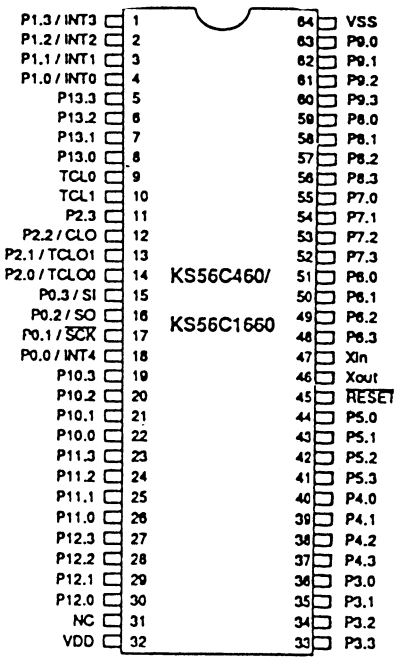
● STK4121-2(POWER IC) : AIC1



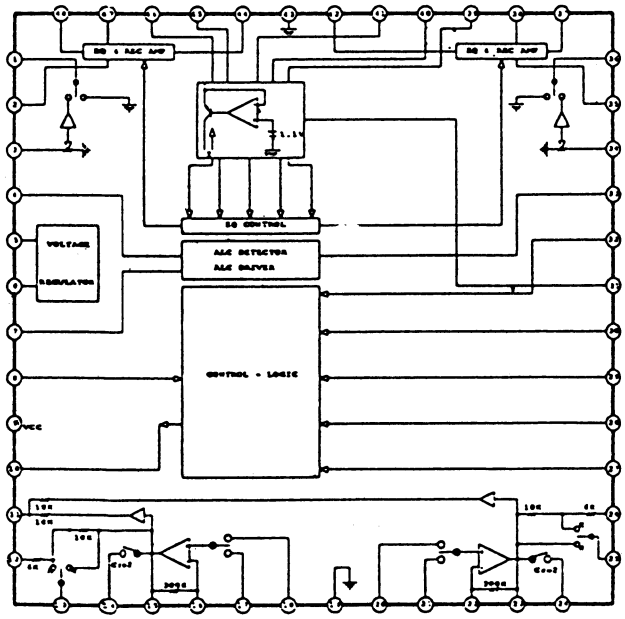
● KA22293 : BIC1



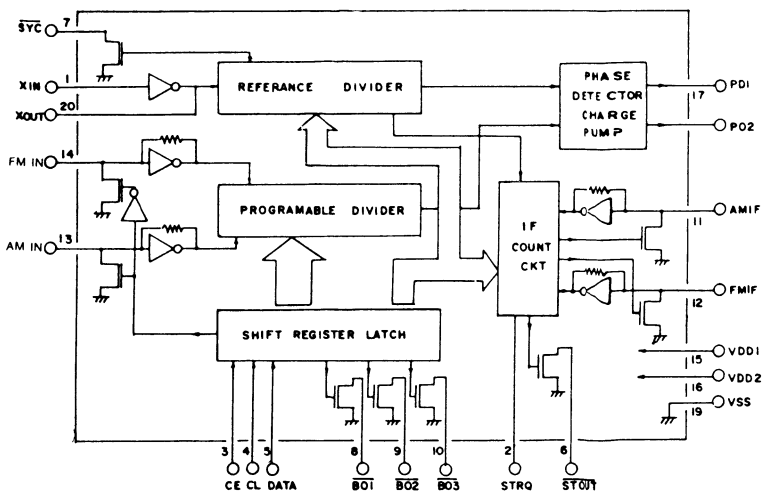
● KS56C1660(MICOM IC) : UIC1

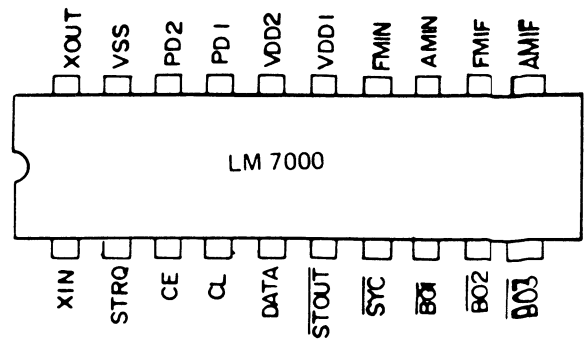


● KA22292(AMP IC) : JIC1

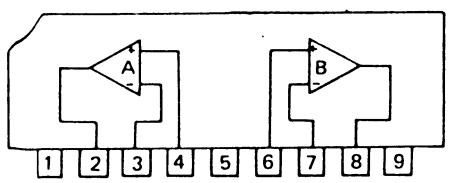


● LM7000(FREQUENCY SYNTHESIZER) : HIC1



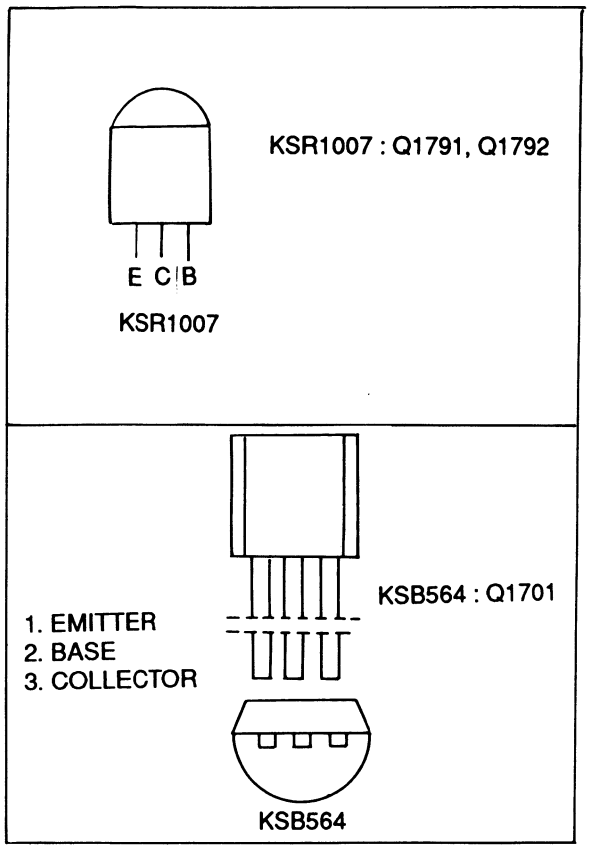


● NJM2068SD/UPC4570HA(OP AMP) : QIC1, 2

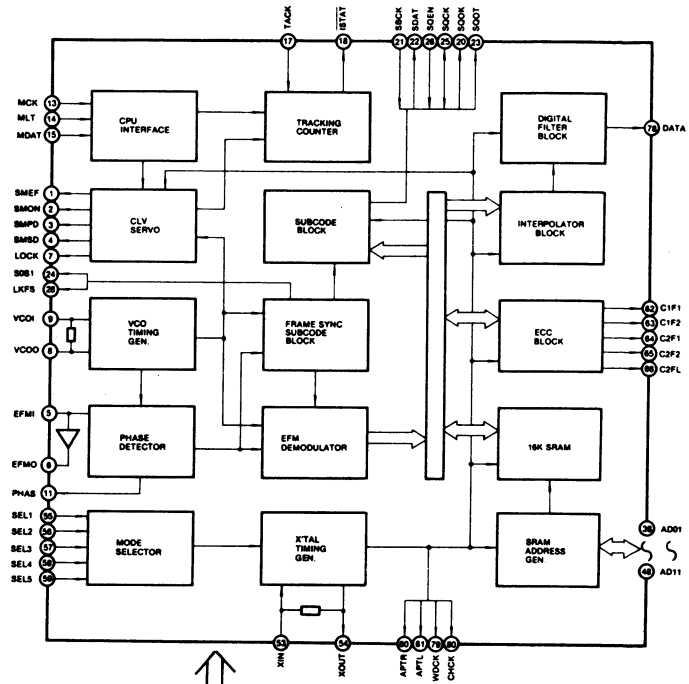


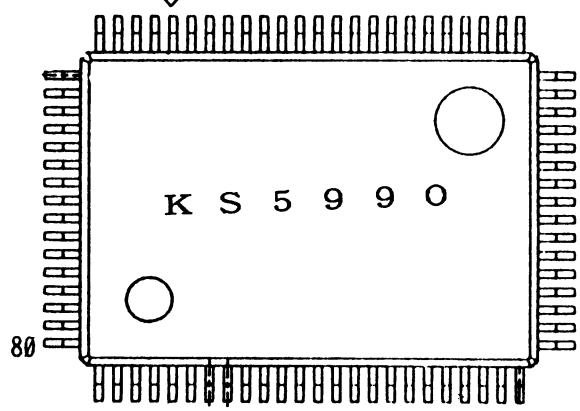
1.V+
2.A OUTPUT
3.A-INPUT
4.A+INPUT
5.V-
6.B+INPUT
7.B-INPUT
8.B OUTPUT
9.V+

2. CD PLAYER

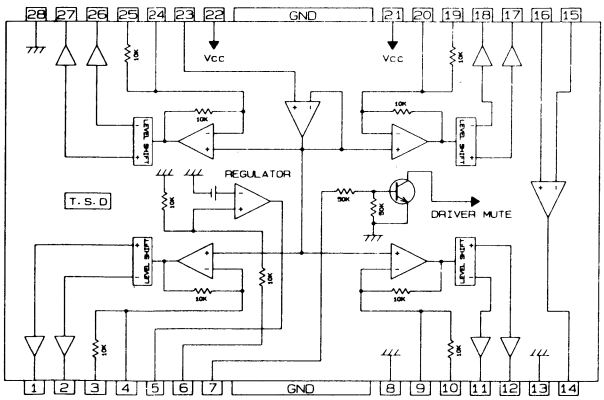


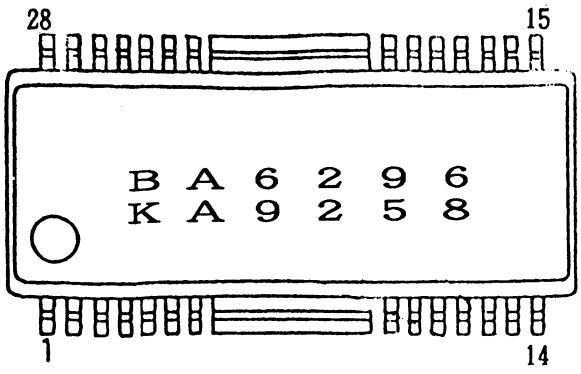
● KS5990(DIGITAL PROCESSOR) : NIC5990



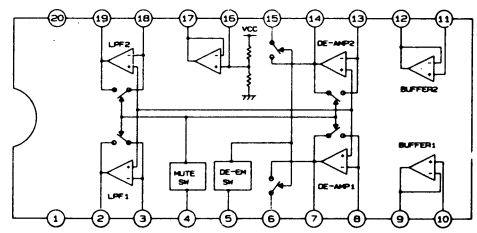


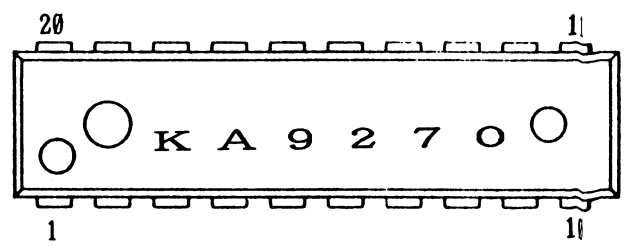
● BA6296/KA9258(DRIVER IC) : NIC9258



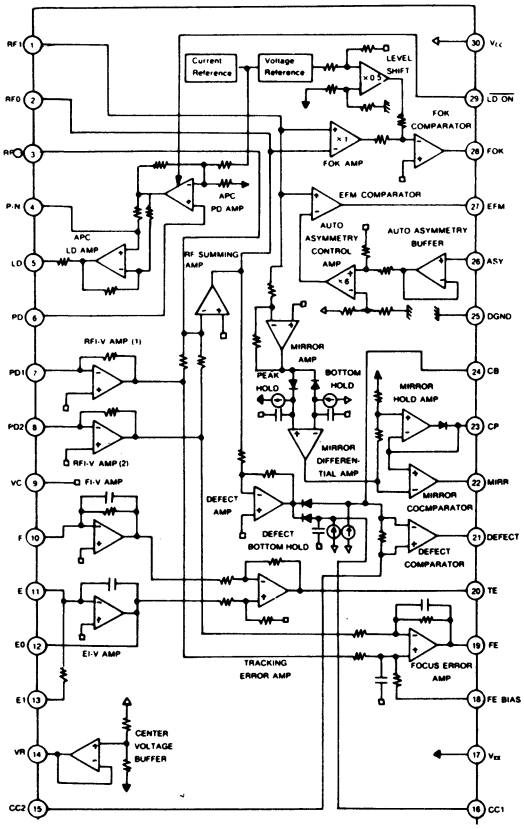


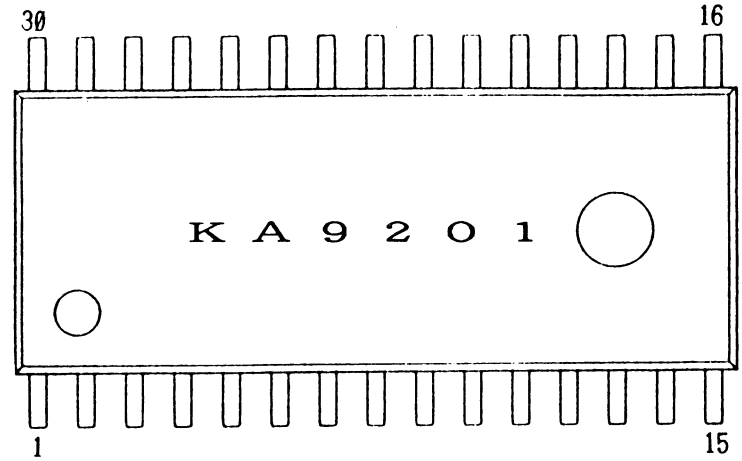
● KA9270(AUDIO FILTER) : NIC9270



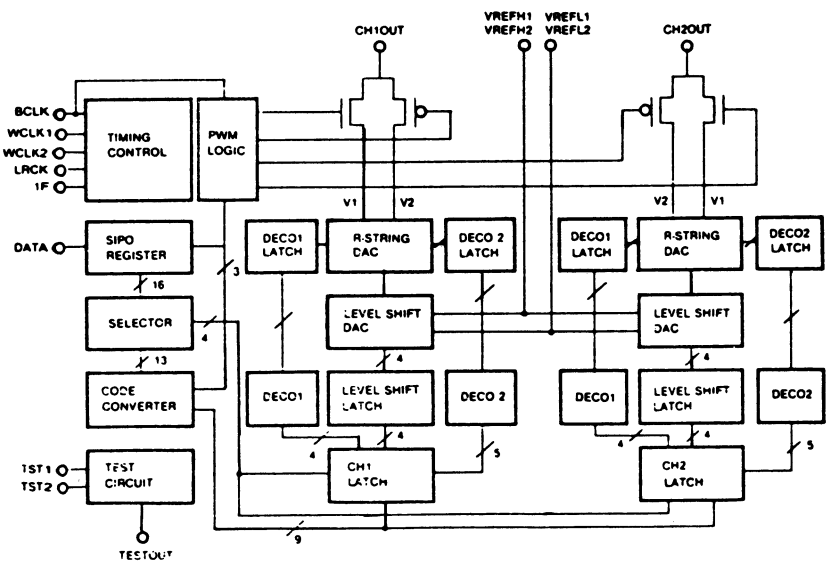


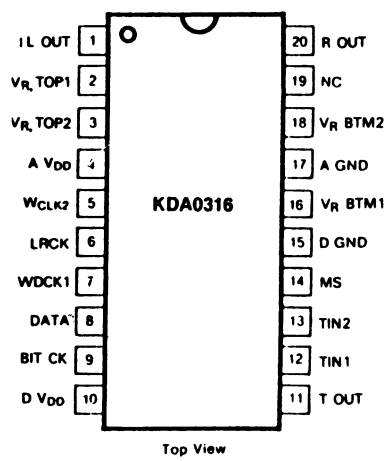
● KA9201 : NIC9201





● KDA0316LD(D/A CONVERTOR) : NIC0316





■ ELECTRICAL PARTS LIST

⚠ indicates parts for circuit safe guarding purpose. Therefore, when replacing, be sure to use specified parts only.

1. MAIN SECTION

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
RR7,8	11048-477-102	R-METAL OXIDE ; RS1T 1K-J MINI TYPE	1	⚠
RR32	11048-577-471	R-METAL OXIDE ; RS2T 470-J MINI TYPE	1	⚠
RR6	11048-477-109	R-METAL OXIDE ; RS1T 11-J MINI TYPE	1	⚠
RR21,3	11048-477-121	R-METAL OXIDE ; RS1T 120-J MINI TYPE	1	⚠
RR9	11048-577-479	R-METAL OXIDE ; RS2T 4.7-J MINI TAPE	1	⚠
RR28	11048-577-101	R-METAL OXIDE ; RS2T 100-J MINI TAPE	1	⚠
AFR1,2	11058-223-101	R-FUSIBLE ; CRF 1/4W 100-J	2	
	11123-0030-00	HEAT SINK ; MAX370 142G WHT AL	1	
MSR1	11249-102-024	VR-SEMI TAPE-H ; EVN-DJA A03B53 (5K)	1	
JSR1L,1R,2L,2R,KSR1	11249-102-044	VR-SEMI TAPE-H ; EVN-DJA A03B24 (20K)	5	
OSR1,DSR1L,1R	11249-102-064	VR-SEMI TAPE-H ; DVN-DJA A03B54 (50K)	3	
LSR1L,1R	11249-102-094	VR-SEMI TAPE-H ; DVN-DJA A03B25 (200K)	2	
CSR1,2	11249-102-104	VR-SEMI TAPE-H ; EVN-DJA A03B23 (2K)	2	
RC9	11607-104-222	C-ELECTROLYTIC ; MC SMS 25V 2200M (16X25)	1	
RC1,2,12	11607-105-222	C-ELECTROLYTIC ; MC SMS 35V 2200M (16X31.5)	3	
RC14	11607-105-332	C-ELECTROLYTIC ; MC SMS 35V 3300M (18X35.5)	1	⚠
OTC2,3,13	11829-512-030	C-TRIMMER ; TZ30R 20PF	4	⚠
DIC1	12109-323-990	IC-DOLBY ; KA2271	1	
RIC1,2	12109-401-690	IC-REGULATOR ; MC7812C/KIA7812P	2	
FIC1	12119-102-720	IC AM, FM IF ; LA1851N	1	
JIC2	12119-201-610	IC-AMPS ; LA2010	1	
HIC1	12119-203-220	IC-FREQ SYNTHESIZER ; LM7000	1	
AIC1	12119-208-500	IC-POWER ; STK4121-2	1	
RIC3	12119-601-830	IC REGULATOR ; MC7806	1	⚠
RQ5,7,8	12139-103-560	TRANSISTOR ; KSA 614-0	3	⚠
CQ3,4,5	12139-201-100	TRANSISTOR ; KSA 928A-Y	3	⚠
HQ1,2	12139-601-450	TRANSISTOR ; 2SK583 TAPE	2	
HQ3,4	12149-101-520	TRANSISTOR ; KSA733-Y, TAPE	2	
UQ16	12149-202-050	TRANSISTOR ; KSB564A-Y	1	
FQ1	12149-301-860	TRANSISTOR ; KSC838-0, TAPE	1	
LQ3,CQ1,0Q1,2,3	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	5	
LQ1,2	12149-301-910	TRANSISTOR ; KSC2331-Y, TAPE	2	
RQ2,3,6	12149-301-930	TRANSISTOR ; KSC1008-Y, TAPE	3	
RQ9	12149-401-070	TRANSISTOR ; KSD73-Y	1	
AQ1L,1R,ZQ1L,1R	12149-401-150	TRANSISTOR ; KSD471-Y, TAPE	4	⚠
RQ4	12149-401-950	TRANSISTOR ; SKD882-Y, TAPE	1	
FQ2,ZQ3,BQ1,UQ17,18,AQ2,JQ5	12159-301-330	TR-DIGITAL ; KSR2003, TAPE	7	⚠
KQ1,JQ1L,1R,2L,2R,3,5,6L, JQ6R,CQ2,6,7,8,UQ1,JQ2, FQ3,EQ1,KQ4	12159-301-780	TR DIGITAL ; KSR 1003	19	
KQ9,8,ZQ2L,2R,JQ4	12159-301-790	TR DIGITAL ; KSR 1009	5	
RD1,2,3,4,5,6,7,8	12169-201-080	DIODE-RECTIFIER ; 1N4001, TAPE	8	⚠
RD9	12169-219-300	DIODE BRIDGE ; PBP151 1.5A 50V	1	
RD1	12169-219-330	DIODE BRIDGE ; PBL403 2A 200V	1	
MD1,2,LD1L,1R,2R,2L,3L, LD3R,4,RD10,12,13,CD1,2,3,4 ,AD16,UD7,8,1,2,3,4,5,6,AD15, RD15,AD1,2,17,BD1,2,MD3,4	12169-301-290	DIODE-SW ; 1SS53/1N4148, CT : 6PF	35	⚠
RZD4	12169-403-340	DIODE-ZENER ; UZP-9.1B/RD9.1F 1W	1	
RZD1	12169-403-890	DIODE-ZN ; 1W22.8-36V UZP24B	1	⚠
RZD3	12169-403-910	DIODE-ZN ; 1W11.4-12.6V UZP-12B	1	⚠
UZD1	12169-404-780	DIODE ZENER ; 500MW UZ-5.1BSB TAPING	1	⚠
HZD1,RZD5	12169-404-790	DIODE ZENER ; 500MW UZ-5.6BSB TAPING	2	
MZD1	12169-404-830	DIODE ZENER ; 500MW UZ-8.2BSC TAPING	1	
OVD1	12169-501-005	DIODE ; KV1236	1	
LL3	12429-070-130	COIL-CHOKE ; AX 470UHG-04	1	
JL1L,1R,LL2L,2R	12429-206-102	BIAS TRAP ; P126XC-7249Z	4	

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
KLPF 1L, 1R, ML3L,3R	12450-304-040	COIL-LOW PASS FILTER ; FV-A BASE 19K/38K	4	
ML1	12619-020-067	COIL 7 CAN ; AB FM BLU	1	
OL5	12619-030-005	COIL-CAN ; AC 450KHZ YEL	1	
OL3	12619-047-202	COIL-CAN ; AD 510UH 220KHZ BRN	1	
OL4	12619-047-203	COIL-CAN ; AD 110UH 796KHZ RED	1	
OL2	12619-561-000	COIL-MW ANT ; MURHN-K5268KAI 250MH	1	
OL1	12619-566-913	COIL-TRANS TEN, CAN ; AF 2.4MH FLW RED	1	
LL1	12619-577-771	COIL-BIAS OSC ; PCHNS-5371 EQJ	1	
A DECK	13349-135-110	CONNECTOR WAFER ; 52004, 11P	1	
FCN1,2,3,4	13349-171-101	CONNECTOR-WAFER ; 53114-1010, MOLEX	4	
RCN2	13349-512-562	CONNECTOR-WAFER ; STICK 5267-04A 4P-TYPE	1	
	13349-527-502	CONNECTOR-WAFER ; STICK 5267-03A 3P	1	
FCT1,2,3	14529-301-753	FILTER-CERAMIC ; SFE 10.7MS3G-A-TF21	3	
OCF1	14529-304-610	FILTER-CERAMIC ; AHCM2-450BL	2	
UX1	14534-504-043	CERAMIC-RESONATOR ; CSA 4.00MG-TF0.1S	1	
HX1	14539-501-140	CRYSTAL ; HC-49/U 7.2MHZ 12P	1	
OX1	14539-504-100	CERAMIC RESONATOR ; CSB456F15	1	
	15684-507-530	HEAT-SINK, S ; AL EXTR BLK 40H, SCM6500	2	
	15684-507-610	HEAT-SINK ; AL EXTR WHT 30H, MQ6T	1	
	A3040-0078	JACK-AUX ; PI8 S-437P-08 4P	1	
ANT	A3059-0006	TERMINAL-BOARD, PUSH ; SP-030 4P ANT	1	
UIC1	A4002-0237	IC-MCU ; KS56C1660-18 MAX465Z DIP	1	
BIC1	A4006-0016	IC-ASIC ; KA22293 QFP 48	1	
JIC1	A4012-0214	IC-LINEAR ; KA22292 QFP PRE AMP	1	
RZD2	A4106-0115	DIODE-ZENER ; UZP-36B 36V 300MA	1	
	B1290-0002	TUNER-FM ; FE337-A05 3G 75/3000HM	1	
LQ4L,4R	B4054-0023	FET ; 2SK373-Y 400MW 6.5MA 100V N-CHANNEL	2	
B DECK	B6010-0399	CONNECTOR-WAFER ; 52328-1310 13P WHT	1	

2. FRONT & POWER SECTION

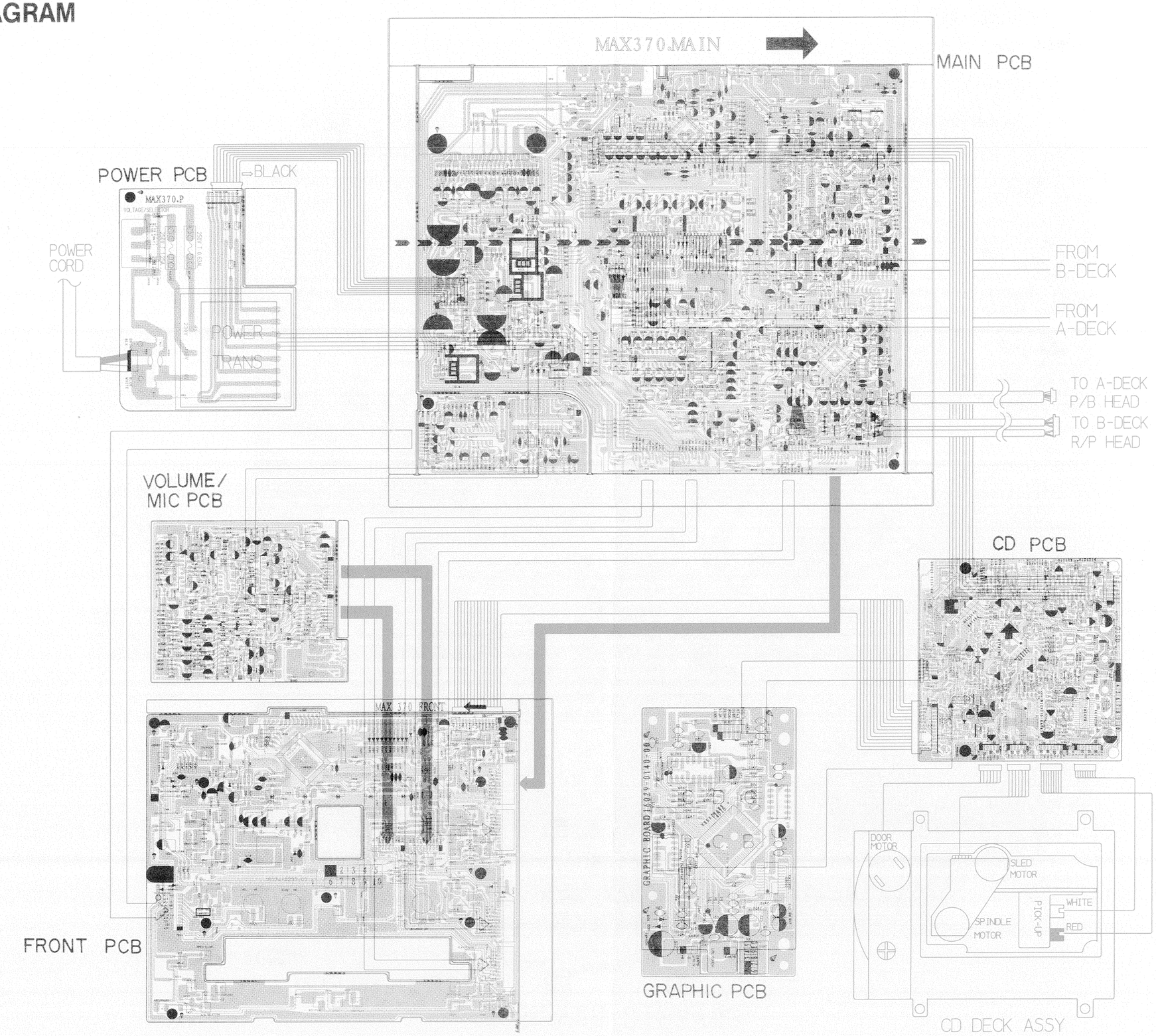
LOCTION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMERK
UQ11,12,13,14,15	12159-301-760	TR DIGITAL ; KSR2004	5	
UQ10	12159-301-780	TR DIGITAL ; KSR 1003	1	
UD9,10	12169-201-080	DIODE-RECTIFIER ; 1N 4001, TAPE	2	
UD11,12,30,31,32,33,34, UD35,36	12169-301-290	DIODE-SW ; 1SS53/1N4148, CT :6PF	9	
REMOCON-EYE	12199-101-240	REMOCON-EYE ; MM-001M (16M/M)	1	
	13323-0089-00	HOLDER-FLT ; MAX370 BLK ABS 94HB	1	
HEAD/PHONE	13339-120-020	JACK HEAD PHONE ; LGT1506-0100 PI3.5	1	
ECN1,2	13349-168-101	CONNECTOR-WAFER ; 52084-1010 10P WHT	2	
FCN1,2,3,4	13349-170-101	CONNECTOR-WAFER ; 52170-1010 MOLEX	4	
AUTO/REV,DB/NR,COUN/ DISP,COUNT	13559-901-100	SWITCH-TACT ; SKHV10910A	4	
UAR89	A1018-0039	R-NETWORK ; RN 1/4 X 8P 472-J	1	
BALANCE VR	A1050-0014	VR-ROTARY, METAL ; RK16K1170Z02-53W 50KW	1	
UX2	A1280-0017	CRYSTAL ; 12MHZ HC-49/U-A 50PPM DV-600C	1	
FLT	A4153-0053	V.F.DISPLAY ; SVA-16BF01S MAX-370	1	
UC7	B1104-0170	C-ELEC ; AC310-502-G473Z5R5/EECS5R5T473	1	
UIC1	B4002-0273	IC-MCU ; LC866224A-5459 AUDIO QFP	1	
	13349-169-101	CONNECTOR-WAFER ; 53095-1010	2	
RF1,2,3	11058-577-010	R-FUSIBLE ; 2T 1-J	3	
QIC3	12119-401-720	IC-SWITCHING ; TC4066BP	1	⚠
QIC1,2	12119-401-760	IC-OP AMP ; NJM2068SD/UPC4570HA	2	
QQ10,11	12149-101-560	TRANSISTOR ; KSA708-Y, TAPE	2	
QQ7R,12,7L,13,3R,4R,5R, QQ1R,3L,1L,5L,2R,2L,6L, QQ4L,6R	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	16	
QQ8,9	12159-301-370	TR DIGITAL ; KSR1203 TAPING	2	
QD1,2,3,4,5	12169-301-290	DIODE-SW ; 1SS53/1N4148, CT: 6PF	5	
QZD1	12169-404-790	DIODE ZENER ; 500MW UZ-5.6BSB TAPING	1	
BROWN, WHITE	13349-156-020	CONNECTOR-WAFER ASS'Y ; 5096-02C	1	
RCN1-1	13349-512-569	CONNECTOR-WAFER ; STICK 5267-08A 8P-TYPE	1	
	13349-527-502	CONNECTOR-WAFER ; STICK 5267-03A 3P	1	
	B1050-0013	VR-ROTARY, METAL ; RK16812MGL0UA 50KB DBL	1	
	13059-808-341	POWER CORD ASS'Y ; KKP419C/B161 VDE W/S	1	
RCLIP 1	13164-101-913	CLIP-FUSE ; PBP 3-1/2H T0.3 SN	2	
	14709-241-160	FUSE ; T250V 0.63A	1	⚠
RC20,21	16034-503-210	COVER-CONDANSER ; PVC, CC-101	2	⚠
P/T	A1199-0075	TRANS-POWER ; EI 115/230V 60/50HZ	1	⚠

3. CD PLAYER

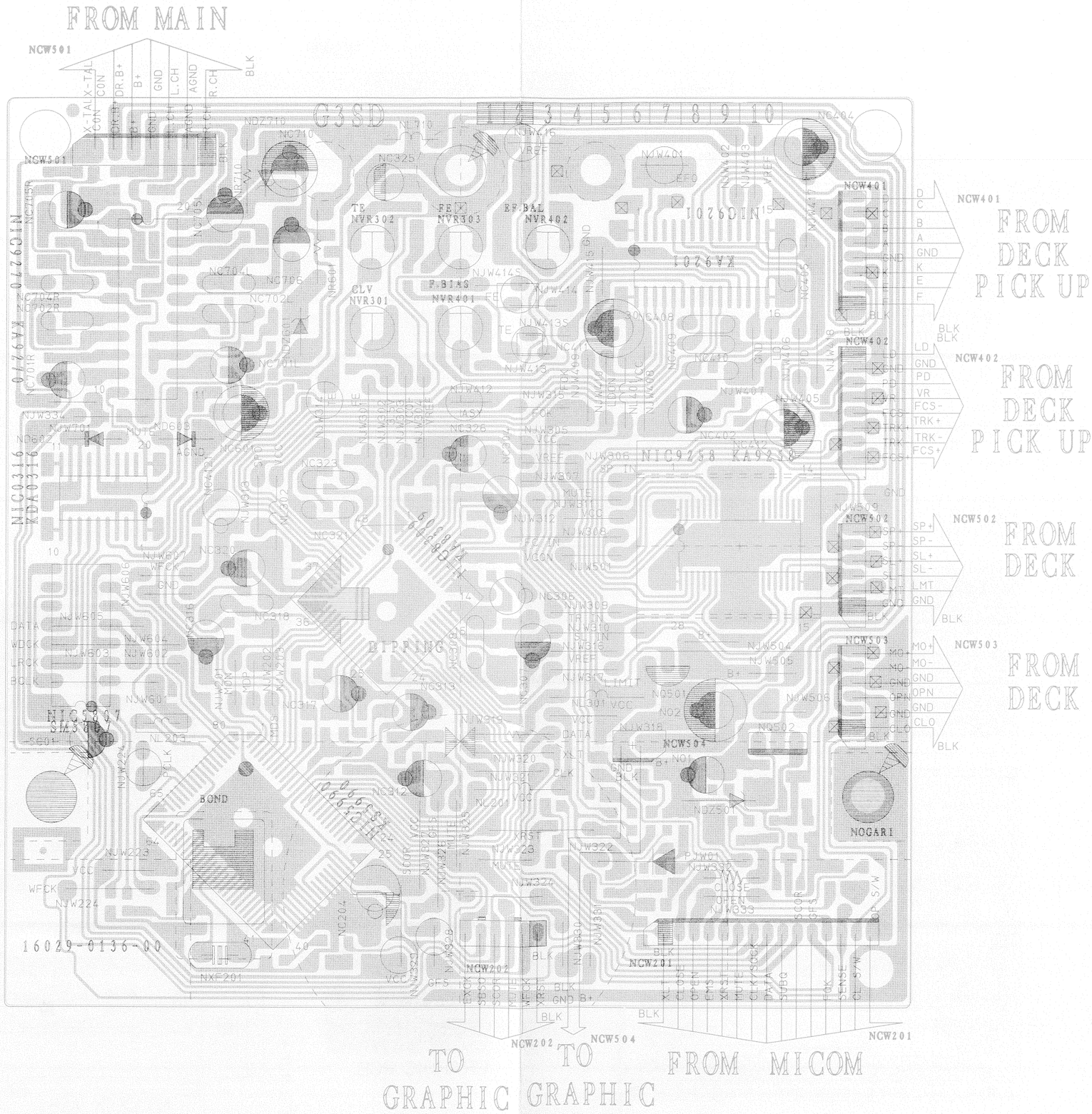
LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
4001,JC01,02,NC205,NR509, GJW01,AJW01,02,03,04, SJW01,4002,4003,4004	11119-101-000	R-CHIP ; SCR2012 PA.P 1/8 0-J	14	
NR202, AR01	11119-101-101	R-CHIP ; MCR10,2012S 100-J	2	
NR201,406,207,209,403,312, AR02	11119-101-102	R-CHIP ; MCR10, 1K-J	7	
NR311,408,308,205,204,407, NR206	11119-101-103	R-CHIP ; MCR10, 2012S 10K-J	7	
NR303,317,409,708R,708L	11119-101-104	R-CHIP ; MCR10, 2012S 100K-J	5	
NR319,704R,704L	11119-101-105	R-CHIP ; MCR10, 2012S 1M-J	3	
NR702R,702L	11119-101-123	R-CHIP ; SCR2012J123 100CT	2	
NR32L,306	11119-101-154	R-CHIP ; MCR10, 2012S 150K-J	2	
NR316	11119-101-182	R-CHIP ; SCR2012J182 100CT	1	
NR315	11119-101-184	R-CHIP ; SCR2012 180K-J	1	
NR402	11119-101-220	R-CHIP ; SCR2012J220 100CT	1	
NR5041,5042	11119-101-222	R-CHIP ;' MCR10, 2012S 2.2K-J	2	
NR701R,L,NR501,401	11119-101-223	R-CHIP ; MCR10, 2012S 22K-J	4	
MR703L,703R	11119-101-273	R-CHIP ; MCR10, 2012S 27K-J	2	
NR313	11119-101-332	R-CHIP ; SCR2012S 3.3K-J	1	
NR320,304	11119-101-333	R-CHIP ; SCR2012J 333 100CT	2	
NR310	11119-101-434	R-CHIP ; MCR 10, 2012S 430K-J	1	
NR503,502,507	11119-101-471	R-CHIP ; SCR2012 471J	3	
PR01,02	11119-101-472	R-CHIP ; MCR 10, 2012S 4.7K-J	2	
NR307	11119-101-473	R-CHIP ; MCR 10, 2012S 47K-J	1	
NR705R,L,NR706R,L,NR707L, NR707R	11119-101-562	R-CHIP ; MCR 10, 2012S 5.6K-J	6	
NR309,208	11119-101-683	R-CHIP ; SCR2012J 683 100CT	2	
NR318	11119-101-822	R-CHIP ; SCR2012 822 100CT	1	
NR301,305	11119-101-823	R-CHIP ; SCR2012 823J	2	
NR314,4081	11119-201-113	R-CHIP ; SCR10, 2012J 11K-J	2	
NR405	11119-201-820	R-CHIP ; SCR2012 1/10W 82-J	1	
NR404	11119-203-203	R-CHIP ; SCR2012J 203 100CT	1	
MC301,302,305,314,FC01	11129-001-104	C-CHIP CERAMIC ; 2012 SL 104-K 50V	5	
NC201,202	11129-001-220	C-CHIP CERAMIC ; SMC2012 220K	2	
NC303,703R,L	11129-001-331	C-CHIP CERAMIC ; C2012 SL 1H 331K	3	
NC711,712,315,324,403	11129-004-102	C-CHIP CERAMIC ; C2012 X7R 1H 102K	5	
NC319,413,203,407	11129-004-103	C-CHIP CERAMIC ; SMC2012B 103K 500P	4	
NC401	11129-004-222	C-CHIP CERAMIC ; C2012 X7R 1H 222K	1	
NC703R,703L	11129-004-471	C-CHIP CERAMIN SMC2012B 474K 500P	2	
NC708,322	11129-004-473	C-CHIP CERAMIC ; C2012B 473K	2	
NC309	11129-008-470	C-CHIP CERAMIC ; C2012CH47P	1	
NC207	11129-009-101	C-CHIP CERAMIC ; SMC2012C 101-K	1	
NC707R,L	11129-019-561	C-CHIP CERAMIC ; SMC2012 PA.P 16V 561K	2	
NQ401,205	11139-801-022	TR-CHIP ; KSA812	2	
NQ206,202,204,207,201,PQ1, PQ2,AQ01	11139-801-032	TR-CHIP ; KSC1623L	8	
PQ03	11139-801-101	TR-CHIP ; KSR2103	1	
NQ302,301	11139-801-182	TR-CHIP ; KSR1103	2	
NQ505,506	11139-801-291	TR-CHIP ;' KSC3265	2	
NQ203	11139-901-062	TR-CHIP ; DTC343TK-T146	1	
NVR402,302,303,401	11249-102-044	VR-SEMI TAPE-H ; EVN-DJA A03B24 (20K)	4	
NVR301	11249-102-104	VR0SEMI TAPE-H ; EVN-DJA A03B23 (2K)	1	
NC408,409	11505-713-103	C-POLYESTER ; CQ921T M 50V 0.01M-J	2	
NC405,318	11505-713-333	C-POLYESTER ; CQ921T M 50V 0.033M-J	2	
NC409	11505-713-822	C-POLYESTER ; CQ921T M 50V 0.0082M-J	1	
NC702R,L	11505-714-122	C-POLYESTER ; CQ921T M 50V 0.0012M-K	2	
NC704R,L	11505-714-152	C-POLYESTER ; CQ921T M 50V 0.0015M-K	2	
NC321	11505-714-222	C-POLYESTER ; CQ921T M 50V 0.0022M-K	1	
NC410	11505-714-472	C-POLYESTER ; CQ921T M 50V 0.0047M-K	1	
NC323	11505-714-682	C-POLYESTER ; CQ921T M 50V 0.0068M-K	1	

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMAR
NC308	11505-714-683	C-POLYESTER ; CQ921T M 50V 0.0068M-K	1	
NQ503,504	12149-102-640	TR-DRIVER ; KTA1664SY-T1	2	
NQ501	12149-202-050	TRANSISTOR ; KSB564A-Y	1	
SQ01	12169-102-320	DIODE-CHIP ; KDS184-ST1	1	
ND602,603,PJW01	12169-301-400	DIODE-SWITCH ; 1N4148M ROHM (SMALL)	3	
NZD601	12169-403-310	DIODE-ZENER ; UZ 5.1B/RD5.1 0.5W	1	
NDZ710,NZD501	12169-404-810	DIODE ZENER ; 500MW UZ 6.8BSB TAPING	2	
NL710	12429-411-101	COIL-CHOKE ; AX 100UH-02 (LAL02TB101K)	1	
NL201,301,401,302	12429-411-109	COIL-CHOKE ; AX 1UH-03 (LAL03TB1ROM)	4	
NL203	12602-214-518	COIL-SPRING ; SBT-0260TF (SBT-0460TF)	1	
NIC9270	A4012-0064	IC-LINEAR ; KA9270 DIP CD AUDIO	1	
NIC9258	A4012-0169	IC-LINEAR ; KA9258 SOP CD 4CH DRIVER	1	
NCW201	A6010-0169	CONNECTOR-WAFER ; 53014-1510 2M/M	1	

■ WIRING DIAGRAM



● G3SD(WIRING DIAGRAM)



■ ABBREVIATION LIST

AC	:	Alternating Current
Addr	:	Address
ADJ.	:	Adjustment
AGC	:	Automatic Gain Control
ALC	:	Automatic Level Control
AM	:	Amplitude Modulation
AMP	:	Amplifier
AMPS	:	Automatic Music Program Search
AMT.	:	Antenna
ASS'Y	:	Assembly
BAL	:	Balance
BLK	:	Black
BLU	:	Blue
BPF	:	Band Pass Filter
BRKT	:	Bracket
CF	:	Ceramic Filter
ch	:	channel
cm	:	centimeter
COM	:	Common
CON MIC	:	Condenser Microphone
D	:	Depth
D/A Convertor	:	Digital/Analog Convertor
dB	:	deciBel
DC	:	Direct Current
DEC	:	Decoder
DET	:	Detector
DEV	:	Deviation
DSP	:	Digital Signal Processor
DTS	:	Digital Tuning System
EA	:	Each
E-HEAD	:	Erase Head
EQ	:	Equalizer
FF	:	Fast Forward
F/F	:	Flip Flop
Fig	:	Figure
FM	:	Frequency Modulation
FREQ.	:	Frequency
GND	:	Ground
GRN	:	Green
GRY	:	Gray
H	:	Height, High
Hz	:	Hertz
IC	:	Integrated Circuit
IF	:	Intermediate Frequency
IFT	:	Intermediate Frequency Transformer
I/O	:	Input/Output
KHz	:	Killohertz
Kg	:	Killogram
L	:	Left, Low
LED	:	Light Emitting Diode
LPF	:	Low Pass Filter
LW	:	Long Wave
Max	:	Maximum
MHz	:	Megahertz
min	:	Minimum
MOD	:	Modulation
MPX	:	Multiplex
MW	:	Medium Wave
NF	:	Negative Feedback
OP AMP	:	Operational Amplifier
OSC	:	Oscillator
PB	:	Playback
PCB	:	Printed Circuit Board
PLL	:	Phase Lock Loop
P/T	:	Power Transformer
R	:	Right
RAM	:	Random Access Memory
REC	:	Record
REG	:	Regulator
REW	:	Rewind
RF	:	Radio Frequency
ROM	:	Read Only Memory
R/P	:	Record/Play
sec	:	Second
SSG	:	Standard Signal Generator
SSP	:	Servo Signal Processor
ST	:	Stereo
ST/EJT	:	Stop/Eject
SW	:	Switch, Short wave
TP	:	Test Point
TR	:	Transistor
TRANS	:	Transformer
V	:	Volt
VIO	:	Violet
VCO	:	Voltage Controlled Oscillator
VOL	:	Volume
Vpp	:	Voltage peak to peak
VR	:	Volume
Vref	:	Reference Voltage
V/SEL	:	Voltage selector
VTVM	:	Vaccum Tube Volt Meter
VVC	:	Voltage Variable Capacitance
W	:	Watt, Weight
WHT	:	White
X, X-tal	:	Crystal
YEL	:	Yellow